Case Shelf

Case / Shelf

170670

Sept. [illegible]
Pl[illegible]

CATALOGUE

OF

NORTH AMERICAN MAMMALS,

CHIEFLY IN THE MUSEUM OF THE

SMITHSONIAN INSTITUTION.

BY

SPENCER F. BAIRD,

ASSSISTANT SECRETARY OF THE SMITHSONIAN INSTITUTION.

SMITHSONIAN

WASHINGTON:
SMITHSONIAN INSTITUTION.
JULY, 1857.

Pacific Railroad & Mexican Boundary [illegible]
Mammals. By S. F. Baird & J. S. Newberry
see page place [illegible]
Cuts & plates.

QL
715
B16?
1856
SCNHRB

I. TABLE OF THE HIGHER GROUPS.

Order.	Page.	Family.	Page.	Sub-family.	Page.	Genus.	Page.	Sub-genus.	Page.	Species examined and identified.	Species not identified.
RAPACIA. 1. *Sub-order.* sectivora	2	1. Soricidae	7	Soricinae	7	1. Neosorex	11	......	......	1	....
						2. Sorex	13	......	......	12	4
						3. Blarina	36	......	......	7	....
		2. Talpidae	57	......	......	4. Scalops	58	Scalops	58	2	1
								Scapanus	58	2	...
						5. Condylura	71	......	......	1	....
						6. Urotrichus	76	......	......	1	....
2. *Sub-order.* Carnivora	78	3. Felidae	80	......	......	7. Felis	81	......	......	5	....
						8. Lynx	89	......	......	4	....
		4. Canidae	102	Lupinae	103	9. Canis	104	......	......	2	....
				Vulpinae	121	10. Vulpes	121	Vulpes	121	4	....
								Urocyon	121	2	...
		5. Viverridae	146	......	......	11. Bassaris	147	......	......	1	....
		6. Mustelidae	148	Martinae	148	12. Mustela	149	......	......	2	....
						13. Putorious	159	......	......	10	1
						14. Gulo	181	......	......	1	....
				Lutrinae	183	15. Lutra	184	......	......	2	....
						16. Enhydra	189	......	......	1	....
				Melinae	190	17. Mephitis	191	Thiosmus	191	1	....
								Mephitis	192	4	1
						18. Taxidea	201	......	......	2	....
		7. Ursidae	206	......	......	19. Procyon	207	......	......	2	1
						20. Ursus	216	......	......	3	....
II. MARSUPIATA	230	8. Didelphidae	231	......	......	21. Didelphys	232	......	......	2	....
III. RODENTIA	235	9. Sciuridae	240	Sciurinae	240	22. Sciurus	243	......	......	12	6
						23. Pteromys	286	......	......	4	....
						24. Tamias	291	......	......	4	....
						25. Spermophilus	304	Otospermophilus	305	5	1
								Colobotis	306	9	....
						26. Cynomys	329	......	......	2	....
						27. Arctomys	338	......	......	2	2
				Myoxinae	350	......	......	......	......	......	....
				Castorinae	350	28. Aplodontia	350	......	......	1	....
						29. Castor	355	......	......	1	....
						30. Castoroides	363	......	......	1	....
		10. Saccomyidae	365	Geomyinae	366	31. Geomys	368	......	......	5	....
						32. Thomomys	388	......	....	7	1
				Saccomyinae	405	33. Dipodomys	406	......	......	3	2
						34. Perognathus	416	Perognathus	417	4	....
								Cricetodipus	418	2	....
		11. Muridac	427	Dipodinac	428	35. Jaculus	429	......	......	1	....
				Murinac	436	36. Mus	436	......	......	4	....
						37. Reithrodon	447	......	......	4	1
						38. Hesperomys	453	Hesperomys	458	13	1
								Onychomys	458	1	....
								Oryzomys	458	1	....
						39. Neotoma	486	......	....	6	....
						40. Sigmodon	501	......	......	2	....
				Arvicolinae	507	41. Arvicola	509	Hypudaeus	515	1	....
								Hemiotomys	515	10	11
								Chilotus	516	1	....
								Pedomys	517	3	....
								Pitymys	517	1	....
						42. Myodes	554	Synaptomys	558	1	....
								Myodes	554	2	....
						43. Fiber	560	......	......	1	....

TABLE OF THE HIGHER GROUPS—Continued.

Order.	Page.	Family.	Page.	Sub-family.	Page.	Genus.	Page.	Sub-genus.	Page.	Species examined and identified.	Species not identified.
		12. Hystricidae	565	....	......	44. Erethizon......	568	....	......	2	....
		13. Leporidae	572	....	......	45. Lepus	573	....	......	13	2
						46. Lagomys.......	618	....	......	1	....
IV. EDENTATA......	621	14. Effodienta......	621	....	......	47. Dasypus.......	623	....	......	1	....
V. PACHYDERMATA.	625	15. Sciuridae	626	....	......	48. Dicotyles	627	....	......	1	....
VI. RUMINANTIA.. .	628	16. Cervidae.......	629	Cervinae	630	49. Alce...........	631	....	......	1	....
						50. Rangifer	633	....	......	2	....
						51. Cervus.........	637	....	......	6	....
		17. Cavicornia.....	664	Antilopinae........	664	52. Antilocapra....	665	....	......	1	....
						53. Aplocerus......	671	....	......	1	....
				Ovinae............	664	54. Ovis.	673	....	......	1	....
				Bovinae..........	664	55. Ovibos.........	680	....	......	1	....
						56. Bos..........	682	....	......	1	....
										220	35

II. LIST OF SPECIES.

A.—LIST OF EXAMINED AND IDENTIFIED SPECIES OF NORTH AMERICAN MAMMALS.

Page.

1. NEOSOREX, Baird. 11

1.—**Neosorex navigator,** Cooper, (n. s.)—Water Shrew.—Fort Vancouver 11

2. SOREX, L. 13

2.—**Sorex trowbridgii,** Baird, (n. s.)—Trowbridge's Shrew.—Astoria to Steilacoom 13

3.—**Sorex vagrans,** Cooper, (n. s.)—Wandering Shrew.—Cape Flattery, W. T., to Petaluma, Cal. Range in lat. 48.30 to 38.20 15

4.—**Sorex suckleyi,** Baird, (n. s.)—Suckley's Shrew.—Steilacoom, W. T., to Monterey, Cal. Range in lat. 47.90 to 36.30 18

5.—**Sorex pachyurus,** Baird, (n. s.)—Thick-Tailed Shrew.—Pembina, Minn., to Fort Ripley. Lat. 49.00 to 46.19 20

6.—**Sorex forsteri,** Rich.—Forster's Shrew.—Carlisle, Pa. (Hudson's Bay, Rich. New York. DeKay.) 22

7.—**Sorex richardsonii,** Bachm.—Richardson's Shrew.—Racine, Wisc.? (Hudson's Bay, Rich. N. W. Territory, Bach.) 24

8.—**Sorex platyrhinus,** Wagner.—Eared Shrew.—Hingham, Mass., to Cleveland, Ohio, and Burlington, Vt 25

9.—**Sorex cooperi,** Bach.—Cooper's Shrew.—Labrador to Medicine Bow Cr., Neb 27

10.—**Sorex haydeni,** Baird, (n. s.)—Hayden's Shrew.—Fort Pierre to Ft. Union, Neb. Range on the Missouri river, from lat. 44.20 to 48.00 29

11.—**Sorex personatus,** Geoff.—Masked Shrew.—Southern Atlantic States. Washington 30

12.—**Sorex hoyi,** Baird, (n. s.)—Hoy's Shrew.—Racine, Wisc 32

13.—**Sorex thompsoni,** Baird, (n. s.)—Thompson's Shrew.—Halifax, N. Scotia, to Zanesville, Ohio 34

3. BLARINA, Gray. 36

14.—**Blarina talpoides,** Gray.—Mole-Shrew.—Halifax, N. S. Montreal to Columbus, Ohio, and Western Georgia. Range in lat. 45.30 to 32.30; in long. from 63.30 to 81.30 36

Page.
15.—**Blarina brevicauda**, Gray.—Short-tailed Shrew.—Illinois to Nebraska................ 42
16.—**Blarina carolinensis**.—Carolina Shrew.—S. Carolina to Missouri........................ 45
17.—**Blarina angusticeps**, Baird, (n. s.)—Burlington, Vermont.............................. 47
18.—**Blarina cinerea**.—Ash-colored Shrew.—S. Pennsylvania to Florida..................... 45
19.—**Blarina exilipes**, Baird, (n. s.)—Short-footed Shrew.—Texas to Mississippi.......... 51
20.—**Blarina berlandieri**, Baird, (n. s.)—Matamoras, Mexico................................. 53

4. SCALOPS, Cuv. 58

a. Scalops.

21.—**Scalops aquaticus**, Cuv.—Common mole.—Middleboro', Mass., to Indian river, Fla., and west to the Lower Mississippi. Range along the Atlantic States from lat. 42. to 27.30.. 60
22.—**Scalops argentatus**, Aud. & Bach.—Silvery Mole.—Detroit to Fort Riley, and south to Prairie Mer Rouge? Range in lat. from 42.20 to Louisiana? in long. 83. to 97... 63

b. Scapanus, Pomel. 58

23.—**Scalops townsendii**, Bach.—Oregon Mole.—Steilacoom, W. T., to San Francisco, Cal. Range on the Pacific coast from lat. 47.10 to 37.48................ 65
24.—**Scalops breweri**, Bach.—Hairy-Tailed Mole.—Connecticut and New York, to Cleveland, Ohio.. 68

5. CONDYLURA, Ill. 71

25.—**Condylura cristata**, Ill.—Star-Nosed Mole.—Halifax, N. S., to Fort Ripley, and to Carlisle, Pa. Range in lat. 40.12 to 46.20; in long. 63.30 to 94.20. 71

6. UROTRICHUS, Temm. 76

26.—**Urotrichus gibbsii**, Baird, (n. s.)—Cascade Mountains, W. T.......................... 76

7. FELIS, L. 81

27.—**Felis concolor**, L.—Panther.—Fort Steilacoom, W. T., to southern Chile, and from the Atlantic to the Pacific. Range from 47 (or 55. according to Richardson) N. lat. to 54 S. lat... 83
28.—**Felis onca**, L.—Jaguar; Mexican Tiger—Brazos river, Texas, to South America.. 86
29.—**Felis pardalis**, Linn.—Tiger Cat; Ocelot.—Northern Texas?........................... 87
30.—**Felis eyra**, Desmarest.—Rio Grande of Texas.. 88

Page.

31.—Felis yaguarundi, Desmarest.—Yaguarundi.—Rio Grande of Texas.................. 88

8. LYNX, Raf. 89

32.—Lynx rufus, Raf.—Wild Cat.—Atlantic to Pacific. Upper Missouri to the Gila river. Not on the Rio Grande?.. 90

33.—Lynx rufus var. **maculatus,** Aud. & Bach.—Texas Wild Cat.—Matamoras, Mexico, to Fort Yuma, Cal., and to Fort Tejon, Cal................................ 93

34.—Lynx fasciatus, Raf.—Red Cat.—Washington Territory................................ 96

35.—Lynx canadensis, Raf.—Canada Lynx.—Nova Scotia to Rocky Mountains. Penn. to 66 N. lat.?.. 99

9. CANIS, L. 104

36*a*.—Canis occidentalis var. **griseo-albus.**—White and Gray Wolf.—North America generally?.. 104

36*b*.—Canis occidentalis var. **nubilus.**—Dusky Wolf.—Missouri river to the Pacific.... 111

36*c*.—Canis occidentalis var. **mexicanus.**—Mexican Wolf.—Rio Grande of Texas and Sonora.. 113

37.—Canis latrans, Say.—Coyote; Prairie Wolf.—Fort Riley, Kansas, to the Pacific, and Upper Missouri to the Rio Grande of Texas........................... 113

10. VULPES. 121

a. Vulpes, Baird. 121

38*a*.—Vulpes fulvus var. **fulvus.**—Red Fox.—Atlantic States to the Missouri, and Pennsylvania to Canada...................... 124

38*b*.—Vulpes fulvus var. **decussatus.**—Cross Fox.—Northern New York to Canada.... 127

38*c*.—Vulpes fulvus var. **argentatus.**—Silver Fox; Black Fox.—Washington Territory 128

39.—Vulpes macrourus, Baird.—Prairie Fox.—Upper Missouri to Plains of Columbia, O. T.. 130

40.—Vulpes velox, Aud. & Bach.—Kit Fox; Swift Fox.—Plains west of Missouri to the Cascade Mountains of Oregon.. 133

41.—Vulpes lagopus, Rich.—Arctic Fox.—Arctic America.................................. 137

b. Urocyon, Baird. 121

42.—Vulpus virginianus, Rich.—Gray Fox.—Pennsylvania to the Southern States, and from the Atlantic to the Pacific; from the Gila to Puget's Sound. According to Aud. & Bach., from Maine to Florida....................... 138

Page.

43.—Vulpes littoralis, Baird, (n. s.)—Island Fox.—Isl. of San Miguel, coast of Cal....... 143

11. BASSARIS, Licht. 147

44.—Bassaris astuta, Licht.—Civet Cat.—City of Mexico to Texas and California......... 147

12. MUSTELA, Linn. 149

45.—Mustela pennantii, Erxl.—Fisher; Black Cat.—Southern Penn. to New York, (to 65 N., Richardson,) and from the Allegheny range to Washington Territory........ 149

46.—Mustela americana, Turton.—Pine Marten; American Sable.—Adirondac Mountains, N. Y., and west to the Cascade Mountains and Puget's Sound... 152

13. PUTORIUS, Cuvier. 159

47.—Putorius pusillus, Aud. & Bach.—Least Weasel.—Pembina, Minn., to Puget's Sound: New York, (DeKay.)........ 159

48.—Putorius cicognanii.—Small Brown Weasel.—Labrador and Nova Scotia to Puget's Sound, and south to Boston, Massachusetts........ 161

49.—Putorius richardsonii, Bp.—Little Ermine.—Nova Scotia to Puget's Sound, and south to Boston........ 164

50.—Putorius noveboracensis, DeKay.—White Weasel; Ermine.—Boston and Northern New York, and Illinois, to southern Penn. and Arkansas. Not in the far west?........ 166

51.—Putorius longicauda, Rich.—Long-Tailed Weasel.—Upper Missouri and Platte. (Carlton House, H. B. T., Rich.)........ 169

52.—Putorius kaneii, Baird, (n. s.)—Kane's Ermine.—Behring's Straits and Siberia... 172

53.—Putorius frenatus, Aud. & Bach.—Bridled Weasel.—City of Mexico to the Rio Grande, Texas........ 173

54.—Putorius xanthogenys.—Yellow-Cheeked Weasel.—San Diego to San Francisco, Cal., on the coast........ 176

55.—Putorius vison, Rich.—Brown Mink.—New York and Massachusetts to Florida, and west to the Pacific and Puget's Sound........ 177

56.—Putorius nigrescens, Aud. & Bach.—Little Black Mink.—Massachusetts and Northern New York to Fort Leavenworth........ 180

14. GULO, Storr. 181

57.—Gulo luscus, Sabine.—Wolverine.—Salt Lake, and Black Hills, Neb., to Arctic America, (northern New York, Aud. & Bach.)........ 181

Page.

15. LUTRA, Linn. 184

58.—Lutra canadensis, Sab.—American Otter.—Northern parts of the United States to Florida, and west to the Rocky Mountains.................................. 184

59.—Lutra californica, Gray.—California Otter.—Coast region and Cascade Mountains of California and Oregon.. 187

16. ENHYDRA, Fleming. 189

60.—Enhydra marina, Fleming.—Sea Otter.—Pacific coast of the United States........... 189

17. MEPHITIS, Cuvier. 191

a. Thiosmus, Licht. 191

61.—Mephitis mesoleuca, Licht.—White-Backed Skunk.—Chico, Mexico, to Western Texas.. 192

62.—Mephitis varians, Gray.—Texas or Long-Tailed Skunk.—Texas and Northern Mexico.. 193

63.—Mephitis occidentalis, Baird, (n. s.)—California Skunk.—Western coast of the United States.. 194

64.—Mephitis mephitica.—Common Skunk.—United States, east of the Missouri plains and north of Texas.. 195

65.—Mephitis bicolor, Gray.—Little Striped Skunk.—Southern Texas and California... 197

18. TAXIDEA, Waterhouse. 201

66.—Taxidea americana, Waterh.—Missouri Badger.—Iowa and Wisconsin to the Pacific coast, and from Arkansas to 49 N. lat.—(To 58 N. lat., Rich.).......... 202

67.—Taxidea berlandieri, Baird.—Mexican Badger.—Northern Mexico, Southern and Western Texas. (To Lower California?)................................... 205

19. PROCYON, Storr. 207

68.—Procyon lotor, Storr.—Common Raccoon.—Massachusetts to Florida, and west to Fort Kearney. Not in Southern Texas?.................................... 209

69.—Procyon hernandezii, Wagler.—California or Black-Footed Raccoon.—Rio Grande of Texas to Pacific coast, and north along the coast to Puget's Sound.. 212

69*a*.—Procyon hernandezii, var. **mexicana,** Baird.—Sonora Raccoon.—Gulf of California 215

20. URSUS, L. 216

70. Ursus horibilis, Ord.—Grizzly Bear.—Plains of Upper Missouri to the Rocky Mountains, and along their base, thence to the Coast of California, (not of Oregon or Washington?)... 219

Page.

71.—**Ursus americanus**, Pallas.—Black Bear.—United States generally...................... 225

71 *a*.—**Ursus americanus** var. **cinnamoneus**, Aud. & Bach.—Rocky Mountains and Oregon...................... 228

72.—**Ursus maritimus**, Linn.—White or Polar Bear.—Shores and Islands of Arctic Regions...................... 229

21. DIDELPHYS, Linn. 232

73.—**Didelphys virginiana**, Shaw.—Possum.—From Hudson River to the southern part of the eastern United States, and west to the Missouri. Not in southern Texas...................... 232

74.—**Didelphys californica**, Bennet.—Texas Possum.—Rio Grande of Texas to the City of Mexico, and west to Lower California...................... 233

22. SCIURUS, Linnæus. 243

75.—**Sciurus vulpinus**, Gmelin.—Southern Fox Squirrel.—North Carolina to Florida, and along the Gulf States to eastern Texas...................... 246

76.—**Sciurus cinereus**, Linn.—Cat Squirrel; Pennsylvania Fox Squirrel.—New Jersey to Virginia, and west to the Alleghenies...................... 248

77.—**Sciurus ludovicianus**, Custis.—Western Fox Squirrel.—Mississippi valley...................... 251

78.—**Sciurus limitis**, Baird, (n. s.)—Pecos Fox Squirrel.—Pecos River, Texas...................... 256

79.—**Sciurus carolinensis**, Gm.—Gray Squirrel; Black Squirrel. (Black var.)—Eastern United States to the Missouri River...................... 256

79 *a*.—**Sciurus carolinensis**, var. **mexicanus**?—Mexican Gray Squirrel.—Northern Mexico...................... 263

80.—**Sciurus fossor**, Peale.—California Gray Squirrel.—Pacific Coast from San Diego, California, to the Columbia River, at Fort Dalles...................... 264

81.—**Sciurus castanonotus**—Baird, (n. s.)—Chestnut Backed Squirrel.—Southern Rocky Mountains. (Fort Webster)...................... 266

82.—**Sciurus aberti**, Woodhouse.—Tuft-Eared Squirrel.—San Francisco Mountains, New Mexico...................... 267

83.—**Sciurus hudsonius**, Pallas.—Red Squirrel; Chickaree.—Labrador (Lat. 56°) to Mississippi; and in the United States from the Atlantic to the Missouri River...................... 260

84.—**Sciurus fremontii**, Towns.—Mountain Gray Squirrel...................... 272

85.—**Sciurus richardsonii**, Bach.—Richardson's Squirrel.—From the Main Rocky Mountains to the Cascade Range...................... 273

Page.

86.—**Sciurus douglassii,** Bach.—Oregon Red Squirrel.—San Francisco to Puget's Sound, near the coast........ 275

23. PTEROMYS, Cuvier. 86

87.—**Pteromys volucella,** Cuv.(?)—Flying Squirrel.—United States, to the Missouri River........ 286

88.—**Pteromys hudsonius,** Fischer.—Northern Flying Squirrel.—Northern parts of the United States from Maine to Minnesota, and north........ 288

89.—**Pteromys alpinus,** Richardson.—Rocky Mountain Flying Squirrel.—Rocky Mountains?........ 289

90—**Pteromys oregonensis,** Bach.—Oregon Flying Squirrel.—Near mouth of Columbia River to Southern California?........ 290

24. TAMIAS, Illiger. 291

91.—**Tamias striatus.**—Chipmunk.—Montreal to Virginia, and west to the Missouri...... 292

92.—**Tamias quadrivittatus,** Rich.—Missouri Striped Squirrel.—Upper Missouri to Rocky Mountains, and west to the Cascade Range. Along the Rocky Mountains as far south as Fort Staunton, New Mexico. Lat. 33° 30′... 297

93.—**Tamias dorsalis,** Baird.—Gila Striped Squirrel.—Fort Webster, New Mexico, about Lat. 33.00, Long. 108.00........ 300

94.—**Tamias townsendii,** Bach.—Townsend's Striped Squirrel.—From Puget's Sound to Petaluma, California, along and west of Cascade Mountains............ 301

25. SPERMOPHILUS, Cuvier. 304

a. Otospermophilus, Brandt. 305

95.—**Spermophilus beecheyi,** Rich.—California Ground Squirrel.—Coast of California, from San Diego to Fort Reading........ 307

96.—**Spermophilus douglassii,** Rich.—Columbia Ground Squirrel.—Columbia River, from Fort Dalles to its mouth, and south to Klamath Lake.............. 309

97. **Spermophilus grammurus,** Bachman.—Line-Tailed Squirrel.—Head of Arkansas River; along the Rocky Mountains to Sonora........ 310

98.—**Spermophilus couchii,** Baird, (n. s.)—Black Ground Squirrel.—Northern Mexico... 311

99.—**Spermophilus lateralis,** Rich.—Say's Striped Squirrel.—Rocky Mountains to Cascades, and between about Lat. 38° 25′ to northern line of California... 312

b. Colobotis, Brandt. 306

100.—**Spermophilus harrisii,** Aud. & Bach.—Harris's Spermophile.—Mohave Desert... 313

Page.

101. **Spermophilus franklini,** Rich.—Gray Gopher.—Northern Illinois and Wisconsin, and to Minnesota and the Saskatchewan........ 314

102.—**Spermophilus tereticauda,** Baird, (n. s.)—Round-Tailed Spermophile.—Fort Yuma, Cal........ 315

103.—**Spermophilus tridecem-lineatus,** Aud. & Bach.—Striped Gopher: Prairie Squirrel.—Eastern Michigan to the plains of the Missouri, and south to Red River, Arkansas, and Fort Thorn, N. M........ 316

104.—**Spermophilus mexicanus,** Wagner.—Mexican Ground Squirrel.—Rio Grande of Texas and the Pecos, and south into Mexico........ 319

105.—**Spermophilus spilosoma,** Bennett.—Sonora Ground Squirrel.—Fort Staunton, N. M. and El Paso, to Chihuahua, and west to the Gulf of California.... 321

106.—**Spermophilus parryi,** Rich.—Parry's Marmot.—Shores and islands of Arctic seas; island of Arikamtchitchi, on the Asiatic side of Behring's Straits...... 323

107.—**Spermophilus richardsonii.**—Yellow Gopher.—Sault St. Marie, Mich., and west to the Rocky Mountains north of Upper Missouri........ 325

108.—**Spermophilus townsendii,** Bach.—Townsend's Spermophile.—Rocky Mountains to the north........ 326

26. CYNOMYS, Raf. 329

109.—**Cynomys ludovicianus.**—Prairie Dog.—Milk river and Upper Missouri; west towards the Rocky Mountains; south to Red River; southwest to the Upper Rio Grande, and a short distance into Sonora?........ 331

110.—**Cynomys gunnisonii,** Baird (n. s.)—Short-Tailed Prairie Dog.—Coochetope Pass to Lodge Pole Creek, in or near the Rocky Mountains........ 335

27. ARCTOMYS, Schreber. 348

111.—**Arctomys monax,** Gmelin.—Woodchuck; Ground Hog.—Massachusetts to Wisconsin and Canada; south to Virginia. (To South Carolina, Aud. & Bach.)........ 339

112.—**Arctomys flaviventer,** Bachman.—Yellow-Footed Marmot.—Black Hills, Neb.... 343

28. APLODONTIA, Rich. 350

113.—**Aplodontia leporina,** Rich.—Sewellel; Showt'l.—Puget's Sound........ 353

29. CASTOR, Linn. 355

114.—**Castor canadensis,** Kuhl.—American Beaver.—Throughout the entire area of North America........ 355

Page.

30. CASTOROIDES, Foster. 363

115.—Castoroides ohioensis, Foster.—Fossil Beaver.—Northern Ohio, New York and Michigan 363

31. GEOMYS, Rafinesque. 368

116.—Geomys bursarius, Rich.—Pouched or Pocket Gopher.—Missouri to Minnesota and Nebraska 372

117.—Geomys breviceps, Baird, (n. s.)—Short-Headed Gopher.—Louisiana to Middle or Western Texas 378

118.—Geomys pinetis, Rafinesque.—Salamander.—Georgia and Florida. (Alabama, Aud. & Bach.) 380

119.—Geomys clarkii, Baird, (n. s.)—Pecos Gopher.—Pecos River, Texas 383

120.—Geomys castanops, Leconte.—Chestnut-Faced Gopher.—Bent's Fort, Upper Arkansas River 384

NOTE.—The two following Mexican species are referred to—

Geomys hispidus, Leconte.—Mexico 386

Geomys mexicanus, Leconte.—Mexico 387

32. THOMOMYS, Maxim. 388

121.—Thomomys bulbivorus.—California Gopher.—Coast of California, from Tejon valley to Petaluma 389

122.—Thomomys laticeps, Baird, (n. s.)—Broad-Headed Gopher.—Humbolt Bay ,Cal.. 392

123.—Thomomys douglassii, Giebel.—Oregon Gopher.—Columbia River and Puget's Sound to the Dalles 394

124. Thomomys borealis.—Upper Columbia River? Canoe Creek, Cal. (East of Cascade mountains.) 396

125.—Thomomys rufescens, Maxim.—Fort Union Gopher.—Fort Pierre to Fort Union, on the Missouri 397

126.—Thomomys umbrinus.—Sonora Gopher.—Cimarron River, N. M., west to the Rocky Mountains, and south into Sonora 399

127.—Thomomys fulvus.—San Francisco mountains, N. M., to Fort Yuma and San Diego 402

33. DIPODOMYS, Gray. 406

128.—Dipodomys ordii, Woodhouse.—Kangaroo Rat.—Platte River, along the eastern slope of the Rocky Mountains, into Durango and Coahuila, Mexico.... 410

129.—Dipodomys phillipii, Gray.—Jumping Rat.—Los Angeles, Cal., to Fort Walla-Walla, O. T., on the Columbia 412

Page.

130.—**Dipodomys agilis,** Gambel.—Fort Yuma and San Diego, Cal., to San Francisco... 414

34. PEROGNATHUS, Maxim. 416

a. Perognathus, Max. 417

131.—**Perognathus penicillatus,** Woodhouse.—Tuft-tailed Mouse.—San Francisco Mountains, New Mexico, to Fort Yuma, California, along Colorado.......... 418

132.—**Perognathus fasciatus,** Pr. Max.—Fort Union, Nebraska, and Fort Riley, Kansas Territory, to Chihuahua.. 420

133.—**Perognathus hispidus,** Baird, (n. s.)—Matamoras.. 421

134.—**Perognathus monticola,** Baird, (n. s.)—St. Mary's, Rocky Mountains.............. 422

b. Cricetodipus, Peale. 418

135.—**Perognathus flavus,** Baird, (n. s.)—Upper Missouri, along eastern slopes of Rocky Mountains to Sonora and Chihuahua; and along the Rio Grande to Matamoras.. 423

136.—**Perognathus parvus,** Leconte.—King's River, California. (Oregon, Peale.)...... 425

35. JACULUS, Wagler. 429

137.—**Jaculus hudsonius.**—Jumping Mouse.—Nova Scotia, (Labrador, Pennant,) to Southern Pennsylvania, and west to the Pacific Ocean.................... 430

TRIBE MURES.

36. MUS, Linnæus. 436

138.—**Mus decumanus,** Pallas.—Brown Rat.—Throughout North America. (Introduced.) 438

139.—**Mus rattus,** L.—Black Rat.—Throughout North America. (Introduced.).......... 439

140.—**Mus tectorum,** Savi.—White-Bellied Rat; Roof Rat.—Tar River North Carolina, to Georgia; Northern Mexico. (Introduced.)................................ 441

141.—**Mus musculus,** Linn.—Common Mouse.—North America generally. (Introduced.) 443

TRIBE SIGMODONTES. 445

37. REITHRODON, Waterhouse. 447

142.—**Reithrodon humilis.**—Harvest Mouse.—South Carolina and Georgia, to St. Louis? 448

143.—**Reithrodon montanus,** Baird, (n. s.)—Rocky Mountains. Lat. 39°.................. 449

144.—**Reithrodon megalotis,** Baird, (n. s.)—Sonora.. 451

145. **Reithrodon longicauda,** Baird, (n. s.)—San Francisco and Petaluma, California.... 451

Page.

38. HESPEROMYS, Waterhouse. 453

a. Hesperomys. 458

146.—Hesperomys leucopus, Wagner.—White-footed Mouse.—Nova Scotia (and Labrador,) to Virginia, and west to the Mississippi River.................... 459

147.—Hesperomys texanus, Woodhouse.—Texas Mouse.—Rio Grande, Texas........... 464

148.—Hesperomys gambelii, Baird, (n. s.)—California and Oregon........................ 464

149.—Hesperomys austerus, Baird, (n. s.)—Washington Territory........................ 466

150.—Hesperomys nuttalli.—Red Mouse.—Southern Pennsylvania to Georgia, and west to St. Louis.. 467

151.—Hesperomys gossypinus, Leconte.—Cotton Mouse.—Lowlands of Georgia and South Carolina.. 469

152.—Hesperomys cognatus, Leconte.—Gray-Bellied Mouse.—Southern Atlantic and Gulf States, from North Carolina to Louisiana............................ 469

153.—Hesperomys boylii, Baird, (n. s.)—Long-Tailed Mouse.—Western California and Oregon.. 471

154.—Hesperomys myoides.—Hamster Mouse.—Canada, Vermont, and New York.... 472

155.—Hesperomys sonoriensis, Leconte.—Upper Missouri, and Rocky Mountains to El Paso and Sonora.. 474

156.—Hesperomys michiganensis, Wagner.—Prairie Mouse.—Michigan, Wisconsin, and Illinois, to St. Louis.. 476

157.—Hesperomys californicus.—Great-Eared Mouse.—Santa Clara, California.......... 478

185.—Hesperomys eremicus, Baird, (n. s.)—Desert Mouse.—Fort Yuma, California.... 479

b. Onychomys, Baird. 458

159.—Hesperomys leucogaster.—Missouri Mouse.—Plains along the upper Missouri.. 480

c. Oryzomys, Baird. 458

160.—Hesperomys palustris, Wagner.—Rice Field Mouse.—South Carolina and Georgia.. 482

39. NEOTOMA, Say & Ord. 486

161.—Neotoma floridana, Say & Ord.—Florida Rat; Wood Rat.—Southern Atlantic and Gulf States, and up the Missouri. Stragglers as far as New York.. 487

162.—Neotoma mexicana, Baird, (n. s.)—Mexican Bush Rat.—Pecos river to Chihuahua, and west to Gulf of California...................................... 490

Page.

163.—**Neotoma micropus,** Baird, (n. s.)—Black Wood Rat.—Lower Rio Grande of Texas and Mexico........ 492

164.—**Neotoma fuscipes,** Cooper, Mss., (n. s.)—Brown-Footed Rat.—Santa Clara to Petaluma, Cal........ 495

165.—**Neotoma occidentalis,** Cooper, (n. s.)—Hairy-Tailed Rat.—Mouth of Columbia, and Puget's Sound........ 496

166.—**Neotoma cinerea.**—Rocky Mountain Rat.—Eastern slope of northern Rocky Mountains, and upper Missouri........ 499

166.*—**Neotoma magister,** Baird, (n. s.)—Carlisle Bone Cave, Pemnsylvania. Fossil.

40. SIGMODON, Say & Ord. 500

167.—**Sigmodon hispidus,** Say & Ord.—Cotton Rat.—Southern Atlantic and Gulf States........ 502

168.—**Sigmodon berlandieri,** Baird, (n. s.)—Texas Cotton Rat.—Texas........ 504

41. ARVICOLA, Lacep. 509

a. *Hypudaeus*, Keys. & Blas.

169.—**Arvicola gapperi,** Vigors.—Red-Backed Mouse.—Nova Scotia, Massachusetts, Canada, and Lake Superior........ 518

b. *Hemiotomys*, Selys.

170.—**Arvicola riparia,** Ord.—Bank Mouse.—Northern and Middle States........ 522

171.—**Arvicola breweri,** Baird, (n. s.)—Gray Mouse.—Muskeget Island, Mass........ 525

172.—**Arvicola rufidorsum,** Baird, (n. s.)—Holmes' Hole, Mass. (Martha's Vineyard.) 526

173.—**Arvicola townsendii,** Bachman.—Washington & Oregon........ 527

174.—**Arvicola montana,** Peale.—Cascade Mountains, Oregon & California; Western Nebraska?........ 528

175.—**Arvicola longirostris,** Baird, (n. s.)—Cascade Mountains, Cal........ 530

176.—**Arvicola edax,** Leconte.—Monterey to San Diego, Cal........ 531

177.—**Arvicola californica,** Peale.—California........ 532

178.—**Arvicola occidentalis,** Peale.—Puget's Sound........ 534

179.—**Arvicola modesta,** Baird, (n. s.)—Sawatch Pass, Rocky Mountains........ 535

c. *Chilotus*, Baird. 516

180.—**Arvicola oregoni,** Bachman.—Steilacoom, W. T., to Tomales Bay, Cal........ 537

d. *Pedomys*, Baird. 517

181.—**Arvicola austera,** Leconte.—Prairie Meadow Mouse.—Wisconsin to Louisiana ... 539

Page.

182.—Arvicola cinnamonea, Baird, (n. s.).—Pembina, Minnesota........................... 541

183.—Arvicola haydenii, Baird, (n. s.)—Fort Pierre, Nebraska.............................. 543

e. Pitymys, McMurtrie. 517

184.—Arvicola pinetorum, Leconte.—Upland Mouse.—Long Island, N. Y., to Florida and the Gulf States, Illinois and Ohio.. 544

42. MYODES, Pallas. 554

a. Synaptomys, Baird. 554

185.—Myodes cooperii, Baird, (n. s.)—United States.. 558

b. Myodes. 554

186.—Myodes torquatus, Keys. & Blas.—Lemming.—Arctic Regions... 558

187.—Myodes obensis, Brants.—Lemming.—Arctic Regions 559

43. FIBER, Cuv. 560

188.—Fiber zibethicus, Cuv.—Musk Rat.—North America, generally........................ 561

44. ERETHIZON, F. Cuvier. 568

189.—Erethizon dorsatus, F. Cuv.—White-Haired Porcupine.—Eastern United States to the Mississippi river, and from Northern Pennsylvania to Canada.—(To 67°, Rich.) 568

190.—Erethizon epixanthus, Brandt.—Yellow-Haired Porcupine.—Upper Missouri; whole Pacific Coast.. 569

45. LEPUS. 573

191.—Lepus glacialis, Leach.—Polar Hare.—Newfoundland, north to the Polar Seas, and Greenland 577

192.—Lepus americanus, Erxl.—Northern Hare; White Rabbit.—Mountains of Virginia to Labrador. Not west of Minnesota?................................ 579

193.—Lepus washingtonii, Baird, (n. s.)—Red Hare.—Washington Territory, to 54° 40′ 583

194.—Lepus campestris, Bach.—Prairie Hare.—Upper Missouri and Saskatchewan Plains to the Cascade Range of Oregon.. 585

195.—Lepus callotis, Wagler.—Jackass or Mule Rabbit.—Northern Mexico through southern Texas, and west through New Mexico to the Rocky Mountains. Fort Boisé, Oregon Territory? Southern Sonora?..............

196.—Lepus californicus, Gray.—California Hare.—Lower Colorado and San Diego, to Fort Jones, Cal. Not found east of Cascades..................... 594

Page.

197.—Lepus sylvaticus, Bach.—Gray Rabbit.—From Massachusetts throughout the United States, as far as Indianola, Texas? and west to the Missouri, as far as Fort Union, Nebraska........ 597

198.—Lepus artemisia, Bach.—Sage Hare.—Regions west of the Missouri to the Rocky Mountains, and to the Cascade Mountains of Oregon, along the Columbia on the north, and to the City of Chihuahua on the south........ 602

199.—Lepus bachmani, Waterhouse.—Bachman's Hare.—Lower Rio Grande of Texas. 606

200.—Lepus audubonii, Baird, (n. s.)—Audubon's Hare.—Coast of California, from San Diego to San Francisco........

201.—Lepus trowbridgii, Baird, (n. s.)—Coast of California, from San Francisco to San Diego........ 610

202.—Lepus aquaticus, Bach.—Water Rabbit.—Lower Mississippi River........ 612

203.—Lepus palustris, Bach.—Marsh Rabbit.—Lowlands of southern coast, from South Carolina to Florida........ 615

46. LAGOMYS, Cuv. 618

204.—Lagomys princeps, Rich.—Little Chief Hare.—South Pass of Rocky Mountains northward........ 619

47. DASYPUS, Linnæus. 623

205.—Dasypus novem-cinctus, Linn.—Texas Armadillo.—Lower Rio Grande of Texas to Paraguay........ 623

48. DICOTYLES, Cuv. 627

206.—Dicotyles torquatus, Cuv.—Texas Peccary; Mexican Hog.—Texas to Red River, Arkansas........ 627

49. ALCE, Ham. Smith. 631

207.—Alce americanus, Jardine.—American Moose.—Northern portions of the eastern United States to Labrador, whence it extends west to the Pacific Ocean........

50. RANGIFER, Ham. Smith. 633

208—Rangifer caribou, Aud. & Bach.—Woodland Caribou.—Maine and New Brunswick, and west to north shore of Lake Superior........ 633

209.—Rangifer groenlandicus.—Barren Ground Caribou.—Barren Grounds of Arctic America and Greenland........ 634

51. CERVUS, L.

Page.

210—Cervus canadensis, Erxl.—American Elk.—Northern portions of United States, 537 to Upper Missouri, and west to the Pacific. Found in the Alleghenies of Pennsylvania and Virginia. (North to 57°, Rich.) 638

211.—Cervus virginianus, Boddaert.—Virginia Deer.—United States generally, east of the Missouri, and as far north as Maine. Eastern Texas ?............... 643

212.—Cervus leucurus, Douglass.—White-Tailed Deer.—Upper Missouri and Platte to the Columbia River and Washington Territory. Western Texas and New Mexico?........................... 649

213.—Cervus mexicanus, Gmelin.—Sonora Deer.—Sonora and near El Paso?........... 658

214.—Cervus macrotis, Say.—Mule Deer.—Upper Missouri and Platte to the Cascade Range, (head of Des Chutes River.) Oregon Territory. Not extending to the Pacific. Headwaters of Arkansas................................ 656

215.—Cervus columbianus, Rich.—Columbia Black-Tailed Deer.—Pacific Coast, from San Diego to Puget's Sound.. 659

52. ANTILOCAPRA, Ord. 665

216—Antilocapra americana, Ord.—Prong-Horn Antelope; Cabree.—Plains west of Missouri, from the Lower Rio Grande to the Saskatchewan, and west to the Cascade and Coast range of the Pacific slope........................ 666

53. APLOCERUS, Ham. Smith. 671

217.—Aplocerus montanus, Rich.—Mountain Goat.—Northern Rocky Mountains of the United States and British America; also on the northern Cascade Mountains... 671

54. OVIS, Linn. 673

218.—Ovis montana, Cuvier.—Bighorn; Mountain Sheep.—Broken ground on the Upper Missouri and Platte. Rocky Mountains, generally, as far west, at least, as Coast and Cascade Mountains of the Pacific slope...................... 673

55. OVIBOS, Blainville. 680

219.—Ovibos moschatus, Blainville.—Musk Ox.—Barren Grounds of Arctic America.. 680

BOS, Linnæus. 682

220.—Bos americanus, Gmelin.—American Buffalo.—Formerly found throughout nearly the whole of North America, east of the Rocky Mountains. Now confined to the plains west of the Missouri and along the slopes of the Rocky Mountains.. 682

II.—LIST OF SPECIES—Continued.

B.—LIST OF DESCRIBED NORTH AMERICAN SPECIES NOT SEEN AND IDENTIFIED.

2. SOREX, Linn.

Page.

1.—**Sorex palustris,** Rich.—Marsh Shrew.—Hudson's Bay region............................ 55

2.—**Sorex fimbripes,** Bach.—Fringed Shrew.—Alleghenies of Pennsylvania.............. 55

3.—**Sorex parvus,** Say.—Least Shrew.—Missouri River.. 56

4.—**Sorex harlani,** Duvernoy.—New Harmony, Indiana. (Doubtful)........................ 56

4. SCALOPS, Cuv.

5.—**Scalops latimanus,** Bach.—Mexico and Texas.. 65

9. CANIS, L.

6 —**Canis occidentalis,** var. ater.—Black Wolf.—Southern States............................ 113

6 *a*.—**Canis occidentalis,** var. rufus.—Red Wolf.—Texas.. 113

13. PUTORIUS, L.

7.—**Putorius nigripes,** Aud. & Bach.—Black-Footed Ferret.—Lower waters of Platte... 180

17. MEPHITIS, Licht.

8.—**Mephitis mesomelas,** Licht.—Black-Backed Skunk.—Louisiana? (Doubtful)....... 199

The following Mexican species may yet be found in the United States: *Mephitis leuconota,* Licht.—Alvarado River, Mexico. *Mephitis macroura,* Licht.—Temperate, Mexico. *Mephitis vittata,* Licht.—Oaxaca, Mexico.

19. PROCYON, Storr.

9.—**Procyon psora,** Gray.—Short-Tailed Racoon.—Sacramento River, California. (Very doubtful).. 215

22. SCIURUS, L.

10.—**Sciurus colliaei,** Rich.—Collie's Squirrel.—West Coast of Mexico...................... 280

11.—**Sciurus mustelinus,** Aud. & Bach.—Weasel Squirrel.—(California, Aud. & Bach.) Probably Mexican?.. 280

12.—**Sciurus nigrescens,** Bennett.—Dusky Squirrel.—Lower California. Not belonging to the fauna of the United States?... 280

13.—**Sciurus lanigerus,** Aud. & Bach.—Woolly Squirrel.—(California, Aud. & Bach.) 280

14.—**Sciurus leporinus,** Aud. & Bach.—Hare Squirrel.—(California, Aud. & Bach.) Doubtful.. 280

15.—**Sciurus ferruginiventris,** Aud. & Bach.—(California, Aud. & Bach.) Probably Mexican.. 281

For an enumeration of other supposed North American Squirrels, see pages 281—285.

	Page.
25. SPERMOPHILUS, Cuv.	304
16.—**Spermophilus macrourus**, Bennet.—West Coast of Mexico. (Not belonging to the United States.)	327
27. ARCTOMYS, Schreb.	338
17.—**Arctomys pruinosus**, Gmelin.—Hoary Marmot; Whistler.—Hudson's Bay to Northwest coast of America	345
18.—**Arctomys lewisii**, Aud. & Bach.—Lewis' Marmot.—Columbia River?	347
32. THOMOMYS, Max.	388
19.—**Thomomys talpoides**, Giebel.—Mole Gopher.—Hudson's Bay	403
33. DIPODOMYS, Gray.	406
20.—**Dipodomys wagneri**, Leconte.—South Carolina(!) (Very doubtful)	415
21.—**Dipodomys heermannii**, Leconte.—Sierra Nevada, California	415
37. REITHRODON, Waterh.	447
22.—**Reithrodon carolinensis.**—South Carolina	452
38. HESPEROMYS, Waterh.	453
23.—**Hesperomys campestris**, Lec.—New Jersey. (Uncertain)	485
41. ARVICOLA, Lac.	509
24.—**Arvicola albo-rufescens**, Emmons.—Massachusetts	549
25.—**Arvicola borealis**, Rich.—Great Bear Lake	549
26.—**Arvicola dekayi**, Aud. &. Bach.—New York	549
27.—**Arvicola drummondii**, Aud. & Bach.—British Rocky Mountains	550
28.—**Arvicola hirsutus**, Dekay.—New York	550
29.—**Arvicola nasuta**, Aud. & Bach.—Massachusetts	550
30.—**Arvicola oneida**, Dekay.—New York	551
31.—**Arvicola richardsonii**, Dekay.—British Rocky Mountains	551
32.—**Arvicola rubricatus**, Rich.—Behring's Straits	551
33.—**Arvicola texiana**, Aud. & Bach.—Texas	552
34.—**Arvicola xanthognathus**, Leach.—Hudson's Bay	552
NOTE.—Of the above *Arvicolae*, those most likely to prove additional species are Nos. 25, 27, 31, 32, and 34.	
45. LEPUS. Lin.	573
35.—**Lepus texianus**, Aud. & Bach.—Texas Rabbit.—Texas and Arkansas	617
36.—**Lepus nuttalii**, Bach.—Least Hare.—Columbia River. (Very doubtful)	617

EXPLANATION OF THE PLATES.*

PLATE I. (California and Oregon.)

Page.

Fig.—*Vulpes littoralis*, Bd.—Coast fox.—Island of San Miguel, California............... 143

PLATE II. (47th parallel.)

Fig. 1—*Lynx fasciatus*, Raf.—Red cat, adult.—Washington Territory..................... 96

Fig. 2—?*Felis concolor*, L.—Panther, very young.—Washington Territory.............. 83
(This may possibly belong to the preceding species.)

PLATE III. (California and Oregon.)

Fig. 1—*Putorius xanthogenys.*—Yellow-cheeked weasel.—San Francisco, California... 176

Fig. 2—*Spermophilus beecheyi*, Rich.—California ground squirrel.—Tejon Pass, Cal... 307

PLATE IV. (41st parallel.)

Fig. 1—*Spermophilus grammurus.*—Rock squirrel.—Fort Webster, N. M................ 310

Fig. 2—*Cynomys gunnisonii*, Baird.—White-tailed prairie dog.—Cooachatope Pass.... 335

PLATE V. (41st and 47th parallels.)

Fig. 1—*Dipodomys ordii*, Woodh.—Kangaroo rat.—Rio Grande valley.................. 410

Fig. 2—*Tamias townsendii*, var. *cooperi.*—Puget's Sound...................................... 301

PLATE VI. (41st parallel.)

Fig. —*Sciurus fremontii*, Towns.—Fremont's squirrel.—Rocky Mountains................ 27

PLATE VII. (47th parallel.)

Fig.—*Sciurus douglassii* var. *suckleyi.*—Steilacoom.—Variety with the hair on the under parts annulated.. 275

PLATE VIII. (35th parallel.)

Fig. 1—*Hesperomys texanus*, Woodh.—Texas mouse.—Pecos river.......................... 464

Fig. 2—*Perognatus flavus*, Baird.—Fort Union, Neb.. 423

Fig. 3—*Hesperomys boylii*, Baird.—Middle fork American river...... 471

---

* The following list of illustrations embraces all that have been prepared for the present volume. as well as those intended to accompany the special reports of the different railroad parties. The plates of the latter series bear on their upper border the official name of their respective surveys, as mentioned also in brackets after the number of the plate in the list, and it is to the reports of the parties thus indicated that reference is to be made for any figures not found in this volume. The names of the officers in command of the different lines of survey are as follows:

47TH PARALLEL.—Governor I. I. Stevens in command. Zoologists, Dr. George Suckley, U. S. A., and J. G. Cooper, M. D.

38th, 39th, 41st PARALLEL.—Captain J. W. Gunnison first in command, succeeded by Captain E. G. Beckwith. Zoologists Mr. Kreutzfeldt and Mr. Snyder.

35TH PARALLEL.—Captain A. W. Whipple in command. Zoologists, C. B. R. Kennerly, M. D., and H. B Möllhausen.

32D PARALLEL.—Captain J. Pope in command.

CALIFORNIA.—Lieutenant R. S. Williamson in command. Zoologist, A. L. Heermann, M. D.

CALIFORNIA AND OREGON.—Lieutenant R. S. Williamson in command. Report presented by Lieutenant H. L. Abbot. Zoologists, E. Sterling, M. D., and J. S. Newberry, M. D. Report prepared by the latter.

Additional references to the expeditions under which the collections described were made, will be found in the introductory remarks at the beginning of the volume.

The numbers placed after the specific names are the catalogue numbers of the particular specimen, which constitutes the original of the figure.

PLATE IX. (47th and 35th parallels.)

Page.

Fig. 1—? *Dipodomys agilis*, Gambel.................... 414

Fig. 2—*Neotoma occidentalis*, Cooper.—Bush-tailed rat.—Shoalwater Bay.................... 496

PLATE X. (41st and 47th parallels.)

Fig. 1—*Thomomys rufescens*, Max.—Gopher.—Fort Pierre, Neb.................... 397

Fig. 2—*Geomys castanops*, Lec.—Gopher.—Bent's Fort.................... 384

PLATE XI. (35th parallel.)

Fig. 1—*Thomomys bulbivorus.*—California gopher.—San Francisco.................... 389

a—view of soft parts of mouth; *b*—under view of left fore foot; *c*—side view; and *d*—under view of the longest claw; *e*—under view of the left hind foot.

PLATE XII. (35th parallel.)

Fig. 1—*Thomomys laticeps*, Baird.—Gopher.—Humboldt bay, California.................... 392

1. *a*—under view of left fore foot; 1. *b*—side view, and 1. *c*—under view of its longest claw; 1. *d*—under view of left hind foot.

Fig. 2—*Thomomys fulvus.*—Gopher.—San Francisco Mountains.................... 402

References to details same as the preceding.

PLATE XIII. (35th parallel.)

Fig.—*Lepus audubonii*, Baird.—California rabbit.—California.................... 608

PLATE XIV. (35th parallel.)

Fig.—*Lepus trowbridgii*, Baird.—California.................... 610

PLATE XV. (47th parallel.)

Fig.—*Lepus washingtonii*, Baird.—Red hare.—Washington Territory.................... 583

PLATE XVI. (35th parallel.)

Fig.—*Antilocapra americana*, Ord.—Prong-horn antelope, young male.—Texas.—The figures drawn from a living animal brought to Washington.................... 666

PLATE XVII.

Fig. 1—*Scalops aquaticus.*—Mole.—Carlisle, Pa.—Drawn from an alcoholic specimen 60

a—view of muzzle from below; *b*—view of muzzle from above; *c*—view of muzzle from the side; *d*—under surface of left palm; *e*—upper surface of hind foot; *f*—tail, showing the naked portion.

Fig. 2—*Scalops townsendii*, var. *californicus*—California mole.—San Francisco.—From dry skin.................... 65

a—muzzle from above; *b*—muzzle from below; *c*—under surface of palm; *d*—under surface of hind foot; *e*—tail.

Page.

Fig. 3—*Scalops breweri*, Bachman.—Hairy-tailed mole.—Cleveland.—From dry skin 68

a—muzzle from above; *b*—muzzle from the side; *c*—muzzle from below; *d*—under surface of left palm; *e*—under surface of hind foot.

Fig. 4—*Scalops breweri*, Bach.—Waterville, New York.—Young.—From alcoholic specimen.. 68

a—muzzle from below; *b*—muzzle from side; *c*—muzzle from above; *d*—under surface of palm; *e*—under surface of hind foot.

Fig. 5—*Scalops townsendii*, Bach.—Puget's Sound.—Alcoholic specimen.................. 65

a—muzzle from below; *b*—muzzle from the side; *c*—muzzle from above.

PLATE XVIII.

Fig. 1—*Condylura cristata.*—Star-nosed mole.—Carlisle, Pa.—From alcohol, (No. 662).. 71

a—muzzle from below; *b*—muzzle from above; *c*—front view of muzzle; *d*—left palm from above; *e*—left palm from below; *f*—left hind foot from below; *g*—left hind foot from above; *h*—tail.

Fig. 2—*Condylura cristata.*—Male.—Middleboro, Mass.—Showing a different character of the nasal crest.—No. 2219.. 71

Fig. 3—*Urotrichus gibbsii*, Baird.—Cascade Mountains, W. T.—No. 662.—Dried skin moistened and magnified two diameters.. 76

a—muzzle from below; *b*—muzzle from above; *c*—muzzle from the side; *d*—left palm from above; *e*—left palm from below; *f*—left hind foot from below; *g*—left hind foot from above.

Fig. 4—*Blarina talpoides.*—Shrew mole.—Columbus, Ga.................................... 36

a—head from the side; *b*—head from beneath; *c*—ear magnified, showing, *x*—the short auricle, bent a little back; *y y*—the anterior border of the meatus; *z*—the antihelix; and *v*—the antitragus. The upper end of the antitragus should pass beneath the antihelix.

Fig. 5—*Sorex vagrans*, Cooper.—No. 1261.—Cape Flattery, W. Territory................ 15

Fig. 6—*Sorex vagrans*, Cooper.—No. 1259.—Cascade Mountains, Oregon Territory.—Magnified two diameters. These figures both represent the same species, and the latter, taken from a specimen with the feet much shrunken, was engraved by mistake.

a—head from the side; *b*—head from beneath; *c*—under surface of left fore foot; *d*—under surface of left hind foot.

PLATE XIX.

Fig. 1—*Mephitis mesoleuca*, Licht.—White-backed skunk.—No. 790.—Western Texas.—Dried skin softened.. 192

a—muzzle from below; *b*—muzzle from above; *c*—muzzle from the side.

Fig. 2—*Putorius richardsonii*, Bon.—Weasel.—No. 654.—Fort Steilacoom.—Skin dried and softened.. 164

a—ear; *b*—left fore foot from below; *c*—left hind foot from below.

Page.

Fig 3—*Putorius xanthogenys.*—Yellow-cheeked weasel.—No. 536.—San Francisco.—Dried skin softened........ 176
a—ear.

Fig. 4—*Putorius cicognanii.*—Brown weasel.—Boston........ 161
a—side of head.

Fig. 5—*Putorius frenatus.*—Brownsville, Texas.—Half grown; in alcohol........ 173
a—side of the head.

Fig. 6—*Putorius richardsonii*, Bon.—Illinois........ 164
a—side of the head.

Fig. 7—*Lutra canadensis*, Sab.—Otter.—Washington, D. C.—Dried skin softened; (skin of feet too much stretched)........ 184
a—side of head reduced one-half; b—muzzle from below; c—left fore foot from below; d—left hind foot from below, (half size.)

Fig. 8—*Lutra californica*, Gray.—California otter.—Cascade Mountains.—Dried skin softened, (feet shrivelled.)........ 187
a—muzzle from in front, (nat. size;) b—left fore foot from below; c—left hind foot from below, (half size.)

PLATE XX.

Fig. 1—*Sciurus douglassi*, Bach.—No. 1265.—Upper des Chutes, Oregon Territory.—In alcohol........ 275
a—side of the head; b—front view of head; c—under surface of left fore foot; d—under surface of left hind foot.

Fig. 2—? *Tamias quadrivittatus.*—Four-lined squirrel.—No. 1266.—Cascade Mountains, Oregon Territory; lat. 44°.—Alcoholic specimen........ 297
a—side of the head; b—front view of head; c—under surface of left fore foot; d—under surface of left hind foot.

Fig. 3—*Spermophilus lateralis.*—No. 1272.—Upper des Chutes.—In alcohol........ 312
a—side of the head; b—front view of head; c—under surface of left fore foot; d—under surface of left hind foot.

Fig. 4—*Aplodontia leporina*, Rich.—Sewellel.—No. 966.—Astoria.—Dried skin softened........ 353
a—front view of the muzzle; b—ear; c—under surface of left fore foot; d—under surface of left hind foot.

Fig. 5—*Perognatus penicillatus*, Woodhouse.—San Francisco Mountains, N. M........ 418
a—ear; b—side view of tail, (from mounted specimen.)

PLATE XXI.

Fig. 1—*Dipodomys ordii*, Woodhouse.—Monterey, Mexico.—In alcohol........ 410
a—side view of head; b—under surface of head, with the jaw closed, showing the pouches and the hairy ante-chamber of the mouth; c—jaws open, showing the interior of the mouth and the transverse ridges of the palate; d—under surface of left fore foot; e—under surface of left hind foot; f—lateral view of a hind toe and claw.

Page.

Fig. 2—*Arvicola montana*, Peale.—No. 1271.—Lost river, California.—In alcohol... 528

a—side view of head; *b*—front view of head; *c*—front face of upper incisors; *d*—under surface of left fore foot; *e*—under surface of left hind foot, (twice nat. size.)

Fig. 3—*Perognatus flavus*, Baird.—Missouri river, above Yellow Stone.—In alcohol... 423

a—side view of head; *b*—under surface of head, with jaws closed; *c*—under surface of head, with jaws open, showing the roof of the palate, with its transverse ridges; *d*—under surface of left fore foot; *e*—under surface of left hind foot.

Fig. 4—*Neotoma occidentalis*, Cooper.—No. 968.—Astoria, O. T.—Dried skin softened 496

a—side of left ear; *b*—under side of left fore foot; *c*—side view of toe of left fore foot; *d*—under surface of left hind foot; *e*—side view of toe of left hind foot.

Fig. 5—*Jaculus hudsonius*.—Jumping mouse —Carlisle, Pa.—In alcohol; twice magnified.. 430

a—side of left ear; *b*—under surface of muzzle; *c*—under side of left fore foot; *d*—under side of left hind foot.

PLATE XXII.

Fig. 1—*Geomys bursarius*.—Gopher.—St. Louis.—In alcohol.................................. 372

a—side view of head; *b*—under surface of head, with the jaws closed, showing the pouches; *c*—under surface of head, with the jaws open, showing the tongue, the hairy ante-chamber of the mouth, and the naked space behind the incisors; *d*—under surface of head, with lower jaw removed, showing the belt of hair across the palate, the naked space between this and the incisors, the naked portion of the palate, with its ridges, and the upper molars; *e*—under surface of the left foot; *f*—under view of middle claw of left fore foot; *g*—side view of the same; *h*—under surface of left hind foot.

Fig. 2—? *Thomomys borealis*.—No. 1260.—Canoe creek, Cal.—In alcohol................. 396

a—side view of head; *b*—under surface of head; *c*—under surface of left fore foot; *d*—side view of its middle claw; *e*—under surface of left hind foot.

Fig. 3—*Geomys pinetis*, Raf.—Gopher.—Florida.—Dried skin softened.................... 380

a—under surface of left fore foot; *b*—side view of its middle claw; *c*—under view of its middle claw; *d*—under view of left hind foot; *e*—front view of upper incisors, showing the single median groove.

Fig. 4—*Geomys hispidus*, Lec.—Mexico.—Dried skin softened............................... 386

a—under surface of left fore foot; *b*—side view of its middle claw; *c*—under surface of the same; *d*—under surface of left hind foot.

PLATE XXIII.

Fig. 1— *Cervus macrotis*, Say.—Mule deer, female.—No. 1200.—Upper Des Chutes, Oregon.. 656

a—side view, and *b*—under surface of left fore foot; *c*—side view, and *d*—under surface of hind foot.

Page.

Fig. 2—*Cervus columbianus*, Rich.—Black-tailed deer, female.—No. 1192.—San Francisco, Cal. 659

a—side view, and *b*—under surface of left fore foot; *c*—side view, and *d*—under surface of left hind foot.

PLATE XXIV.

Fig. 1—*Cervus virginianus*, Bodd.—Virginia deer.—New York 643

c—side view of hind foot; *d*—under view of hind foot.

Fig. 2—*Cervus mexicanus*, Gm.—Sonora deer, female.—Sonora 658

a—side view, and *b*—under surface of left fore foot; *c*—side view, and *d*—under surface of left hind foot.

PLATE XXV.

Fig.—*Antilocapra americana.*—Antelope 666

Figures of various horns of the American antelope, (mostly of the right one,) one showing the inner side, the other, the same horn viewed from behind, and exhibiting not only the outline, but the angle of inclination with the skull; these views are marked respectively *a* and *b*. Views of horns of the European chamois are added to illustrate the differences. The numbers used are those of the Smithsonian osteological catalogue.

Fig.—*Antilocapra americana*, Ord.—Antelope.—No. B—Male, Upper Missouri. No. 1912—Young male, Fort McKavit, Texas, (from thespecimen figured on Plate XVI.) No. 963—Fort Union, Nebraska. No. 1081—San Elizario, Texas. No. 655—Fort Union, Neb. No. 2471—Fort Chadbourne, Texas. No. 890—Laramie Peak. No. C—Upper Missouri. D—Diagram showing the inclination of horns with the vertical plane of the skull.

Fig.—*Capella rupicapra.*—Chamois.—No. 1854.—Switzerland. No. 882, female.—Tyrol.

PLATE XXVI.

Figures of *Soricidae*, with views of the skulls magnified three diameters.

Neosorex navigator, Cooper.—No. 629.—Vancouver, Oregon Territory 11

Sorex trowbridgii, Baird.—Astoria? Oregon Territory 13

Sorex vagrans, Cooper.—No. 1675.—Shoalwater bay, Oregon Territory 15

Sorex cooperi, Bach.—No. 2047.—West Northfield, Illinois 27

PLATE XXVII.

Figures of *Soricidae*, with views of the skulls magnified three diameters.

Sorex pachyurus, Baird.—No. 1674.—Pembina, Minn 20

Sorex suckleyi, Baird.—No. 1677.—Steilacoom, Washington Territory 18

Sorex thompsoni, Baird.—No. 1686.—Burlington, Vermont 34

Sorex haydeni, Baird.—No. 1685.—Fort Union, Nebraska 29

PLATE XXVIII.

Page.

Figures of *Soricidae* and of *Urotrichus*, with views of skulls magnified three diameters.

Sorex platyrhinus.—No. 1699.—Middleboro', Mass. 25

Sorex hoyi, Baird.—No. 1688.—Racine, Wisconsin 32

Blarina berlandierii, Baird.—No. 2159.—Matamoras, Mexico 53

Blarina exilipes, Baird.—No. 2157.—Washington, Miss 51

Urotrichus gibbsii, Baird.—No. 662.—Washington Territory 76

PLATE XXIX. (California and Oregon.)

Fig.—*Mephitis bicolor*, Gray.—Spotted skunk.—Santa Clara, California 197

PLATE XXX.

Figures of skulls and teeth.

Fig. 1—*Scalops townsendii*, Bach.—No. 1275.—Steilacoom, Washington Territory.—Natural size 23

a—head from below; *b*—head from above; *c*—head from the side; *d*—lower jaw; *e*—lower jaw from above.

Fig. 2—*Scalops breweri*, Bach.—No. 1779.—Cleveland, Ohio 68

Old, and teeth, much worn; natural size; references as in fig. 1; *f*—teeth of left side of upper jaw magnified; *g*—teeth of left side of lower jaw magnified.

Fig. 3—*Scalops townsendii*, var. *californicus.*—California mole.—Petaluma, California. 65

a—head from the side; *b*—lower jaw from the side, twice magnified; *c*—head from above; natural size.

Fig. 4—*Sorex forsteri*, Rich.—No. 1773.—Carlisle, Penn 22

a—side view of the head; *b*—side view of the lower jaw, magnified three diameters; *c*—head from below; natural size. *Note.*—All the remaining figures on the plate have the same references.

Fig. 5—*Blarina brevicauda.*—No. 3107.—Fort Berthold, Nebraska 42

Fig. 6—*Blarina talpoides.*—No. 1776.—Racine, Wisconsin 36

Fig. 7—*Blarina angusticeps*, Baird.—No. 2120.—Burlington, Vermont 47

Fig. 8—*Blarina carolinensis.*—No. 1779.—St. Louis, Mo 45

Fig. 9—*Blarina cinerea.*—No. 1771.—S. Carolina 45

Fig. 10—*Blarina cinerea* (*parva.*)—No. 3103.—Carlisle, Penn 50

PLATE XXXI.

Fig. —*Canis occidentalis.*—Gray wolf.—No. 1804.—Adirondac mountains, New York. 104

Skull two-thirds natural size; 1—skull from below; 2—skull from above; 3—skull from the side; 4—lower jaw from the side; 5—lower jaw from above.

PLATE XXXII.

Fig. —*Vulpes fulvus.*—Red fox, adult male.—No. 683.—Carlisle, Penn 124

Skull natural size; figs. 1–5, as in plate XXXI.

PLATE XXXIII.

Page.

Fig. —*Vulpes macrourus*, Baird.—Great-tailed fox, adult female.—No. 1325.—Fort Kearney, Nebraska 130

Skull natural size.—Figs. 1–5, as in plate XXXI.

PLATE XXXIV.

Fig. —*Vulpes velox.*—Kit fox.—No. 1345.—Fort Kearny, Nebraska.......... 133

Skull unusually large; natural size; figs. 1–5, as in plate XXXI.

PLATE XXXV.

Fig. 1—*Vulpes* (*Urocyon*) *virginianus.*—Gray fox.—No. 771.—Perry county, Penn ... 1

Skull natural size; *a*—skull from below; *b*—skull from above; *c*—skull from the side; *d*—side of lower jaw; *e*—lower jaw from above.

Fig. 2—*Vulpes* (*Urocyon*) *littoralis,* Baird.—Coast fox.—No. 2154.—San Miguel, California.......... 143

Skull natural size; *a–e,* as in fig. 1.

PLATE XXXVI.

Fig. 1—*Mustela pennantii,* Erxl.—Fisher.—No. 1073.—St. Lawrence county, New York.......... 149

Rather young; skull natural size. The under view of the skull exhibits the transverse ridges of the skin of the palate, dried against the bone; *a–e,* as in plate XXXV.

Fig. 2—*Mustela americana,* Turton.—American sable.—No. 1668.—Essex county, New York.......... 152

Skull natural size. View of head from above to show its narrow, elongated shape, as compared with fig. 1 on next plate.

Fig. 3—*Putorius noveboracensis,* De Kay.—White weasel.—No. 624.—Carlisle, Pa..... 166

Male; figs. *a–e* as in plate XXXV.

PLATE XXXVII.

Fig. 1—*Mustela americana,* Turton.—American sable.—No. 1163.—Essex county, New York.......... 152

Skull natural size; *a–e* as in plate XXXV.

Fig. 2—*Putorius vison.*—Mink.—No. 753.—Carlisle, Penn.......... 177

Very old skull; natural size; references as in preceding.

Fig. 3—*Putorius vison.*—Mink.—No. 718.—Carlisle, Penn.......... 177

Immature skull with the milk teeth. References as in preceding.

PLATE XXXVIII.

Fig.—*Lutra canadensis,* Sab.—Otter.—Washington, D. C.......... 184

Adult skull.—Natural size. References as in Plate XXXI.

PLATE XXXIX.

Page.

Fig. 1—*Taxidea berlandieri*, Baird.—Mexican badger.—No. 1391.—Matamoras, Mexico. 205
Mature skull. Natural size. References as in Plate XXXV.

Fig. 2—*Taxidea labradoria*.—Missouri badger.—No. 1178.—Bois de Sioux, Neb....... 202
Under view of left side of upper jaw, to show the differences from *T. berlandieri*.

Fig. 3—*Mephitis mesoleuca*, Licht.—White-backed skunk.—No. 1886.—Western Texas. 192
Very old skull; the sutures all obliterated and the teeth much worn. References as in fig. 1.

PLATE XL.

Fig.—*Procyon hernandezii*, Wieg.—Black-footed racoon.—No. 1875.—Bodega, California.. 212
Rather immature skull, the posterior portion wanting. References as in Plate XXXI.

PLATE XLI.

Fig.—*Ursus horribilis*, Ord.—Grizzly bear.—No. 1219.—Pacific coast..................... 219
Very old skull. Figs. 1–5 as in Plate XXXI. All about one-third natural size. Fig. 6, left upper teeth from outside. Fig. 7, left upper teeth from below. Fig. 8, left lower teeth from outside. Fig. 9, left lower teeth from above.

PLATE XLII.

Fig.—*Ursus horribilis*, Ord.—Grizzly bear.—No. 1220.—Pacific coast..................... 219
Rather immature skull; the deciduous teeth just shed. References as in Plate XLI, except that figs. 1—5 are half natural size.

PLATE XLIII.

Fig. 1–9—*Ursus arctos*, L.—Brown bear.—No. 1033.—Sweden.............................. 223
Marked two years old. About the same age as the skull on the preceding plate. References as in Plate XLI, except that figs. 1–5 are one half natural size.

Figs. 10–13—*Ursus americanus*, Pallas.—Black bear.—No. 1154.—Prairie Mer Rouge, Louisiana.. 225
Teeth of natural size. Fig. 10, left upper teeth from outside; fig. 11, left upper teeth from below; fig. 12, left lower teeth from outside; fig. 13, left lower teeth from below.

PLATE XLIV.

Fig.—*Ursus maritimus*, L.—Polar bear.—No. 903.—Greenland.............................. 229
Adult skull. References as in Plate XLI; figs. 1–5 one-third natural size.

PLATE XLV.

Page.

Fig. 1—*Spermophilus douglassi*, Rich.—Oregon ground squirrel.—No. 1881.—Oregon Territory.......... 309

a—skull from below; *b*—skull from above; *c*—skull from the side; *d*—left side of lower jaw; *e*—left side of lower jaw from above.

Fig. 2—*Sciurus carolinensis*, Gm.—Gray squirrel.—No. 1626.—Washington, D. C.... 256

References *a–e* as in fig. 1.

Fig. 3—*Sciurus douglassi*, Bach.—No. 2229.*—Upper Des Chutes, Oregon Territory... 275

References *a–e* as in fig. 1.

Fig. 4—*Tamias townsendii*, Bach.—No. 2226.—Cape Flattery, Wash. Territory....... 301

References *a–e* as in fig. 1; *f*—left upper molars from below; *g*—left lower molars from above. These last two magnified nearly three diameters.

Fig. 5—*Spermophilus lateralis*, Say.—Squirrel.—No. 2228.—Upper des Chutes, Oregon Territory.......... 312

Figs. *a–g;* references as in the last figure.

PLATE XLVI.

Fig. 1—*Sciurus hudsonius,* Pallas.—Red squirrel.—No. 727.—Carlisle, Penn............ 260

Skull *a–e* as in preceding plate.

Fig. 2—*Tamias striatus.*—Ground squirrel.—No. 1898.—Essex county, New York.... 292

a–g, as in fig. 4 of preceding plate; *f–g* magnified two diameters.

Fig. 3—*Spermophilus beecheyi*, Rich.—No. 1598.—Tejon valley.......... 307

a–g as in preceding figure.

Fig. 4—*Spermophilus franklini*, Rich.—♀ No. 1885.—Racine, Wisconsin.......... 314

a–e as in fig. 1.

PLATE XLVII.

Fig. 1—*Arctomys flaviventris*, Bach.—Yellow-footed marmot.—No. 2372.—Black hills. 343

Skull, *a–e* as in plate XLVI.

Fig. 2—*Cynomys ludovicianus*, Raf.—Prairie dog.—No. 1350.—Fort Kearney.......... 331

a–e as in the preceding.

Fig. 3—*Cynomys ludovicianus*, Raf.—No. 1349.......... 331

Molars of a very old individual, much worn obliquely; *a*—under view of right upper molars; *b*—upper surface of lower molars.

Fig. 4—*Cynomys gunnisonii*, Bd.—No. 1636.—Cochetope Pass.......... 335

References *a–g*, as in fig. 4, plate XLV; *f–g* slightly enlarged.

PLATE XLVIII.

Fig. 1—*Castor canadensis*, Kuhl.—Beaver.—No. 1003.—Rio Grande, Texas.......... 355

Skull, reduced to two-thirds natural size; *a*—skull from below; *b*—skull from above; *c*—skull from the side; *d*—left side of lower jaw; *e*—left side of lower jaw from above.

---

* Incorrectly printed 2269 in the list of specimens.

Page.

Fig. 2—*Sciurus cinereus*, L.—Fox squirrel.—No. 932.—Washington, D. C............ 248
References *a–e*, as in fig. 1.

Fig. 3—*Spermophilus harrisii*, A. & B.—No. 1600.—Mohave Desert..................... 313
a–e as in fig. 1; *f*—left upper molars from below, (inverted by the engraver;) *g*—left lower molars from above. The two last figures magnified nearly three times.

PLATE XLIX.

Fig. 1—*Arctomys monax*, Gmelin.—Woodchuck.—No. 1261.—Western Missouri....... 339
Skull natural size; *a–e* as in the preceding plate.

Fig. 2—*Aplodontia leporina*, Rich.—Sewellel.—Puget's Sound.............................. 353
Natural size; *a–e* as in the last; *f*—view of occiput from behind.

PLATE L.

Fig. 1—*Geomys clarkii*, Baird.—No. 1623.—Presidio del Norte............................ 383
a—under view of skull; *b*—upper view of skull; *c*—the same from the side; *d*—upper molars of the left side, magnified; *e*—lower jaw from the side; *f*—lower jaw from above; *g*—lower molars of the left side, magnified.

Fig. 2—*Geomys bursarius*.—Gopher.—No. 1767.—St. Louis.................................... 372
References as in fig. 1.

Fig. 3—*Thomomys bulbivorus*.—California Gopher.—No. 1280.—Monterey, California 389
References as in fig. 1.

PLATE LI.

Fig. 1—*Dipodomys ordii*, Woodh.—Kangaroo rat.—Western Texas........................ 410
Skull. All the outlines three times the natural size; *a*—skull from below; *b*—skull from above; *c*—skull from the side; *d*—left side of lower jaw; *e*—left side of lower jaw from above; *f*—occiput from behind.

Fig. 2—*Dipodomys ordii*, Woodh.—No. 1125.—Sonora, Mexico............................ 410
Another skull, natural size; *a–e* as in the preceding figure; *f*—upper molars from below; *g*—left lower molars from above; *h*—upper incisors from the front; *f*, *g*, *h*, magnified about twice.

Fig. 3—*Perognathus monticola*, Bd.—No. 1585.—St. Mary's, Rocky mountains......... 422
Quite old; references *a–h*, as in the last figure; *f*, *g*, and *h*, magnified nearly three diameters.

Fig. 4—*Perognathus hispidus*, Bd.—No. 1695.—Matamoras.................................. 421
Male; teeth not worn; references *a–g* as in preceding.

PLATE LII.

Fig. 1—*Thomomys bulbivorus*.—California gopher.—No. 1280.—Monterey, California. 389
Skull. References *a–g* as in fig. 2, plate LI; *f* and *g* magnified two diameters.

Fig. 2—*Geomys breviceps*, Baird.—No. 1138.—Prairie Mer Rouge.......................... 378
References *a–g*, as in preceding figure; *f* and *g* magnified about three times.

Page.

Fig. 3—*Hesperomys boylii*, Baird.—No. 1270.—Middle fork of American river, Cal.... 471

References *a–g*, as in fig. 1; *f* and *g* magnified nearly three diameters.

Fig. 4—*Hesperomys* (*Oryzomys*) *palustris*.—♂—No. 2111.—Society Hall, S. C.......... 482

References *a–g*, as in fig. 1.

Fig. 5—*Hesperomys texanus*, Woodh.—No. 2217.—Turkey creek, Texas.................. 464

Grinding surfaces only of the molar teeth; *a*—of left upper molars; *b*—of left lower molars, magnified rather more than twice.

Fig. 6—*Mus tectorum*, Savi.—White-bellied rat.—No. 1685.—Cadcreita, New Leon.... 441

References *a–g*, as in fig. 1; *f* and *g* magnified twice.

PLATE LIII.

Fig. 1—*Neotoma fuscipes*, Cooper.—Bush rat.—No. 2040.—Santa Clara, California.... 496

Male quite old. *a*—skull from below; *b*—skull from above; *c*—skull from the side; *d*—left side of lower jaw; *e*—left side of lower jaw from above; *f*—upper molars of left side; *g*—lower molars of left side. The two last magnified three times.

Fig. 2—*Neotoma floridana*, Say & Ord.—Wood rat.—No. 2056.—St. Simon's island, Georgia.. 487

Very large and old. References *a–g*, as in the last. Two last magnified three times.

Fig. 3—*Neotoma occidentalis*, Cooper.—Brush-tailed rat.—No. 1591.—Shoalwater bay, Washington Territory.. 496

Not very old. References *a–g* as in fig. 1; *f* and *g* magnified twice.

Fig. 4—*Neotoma magister*, Baird.—Fossil; from the bone cave at Carlisle, Pa.......... 498

a—left side of lower jaw; *b*—left side of lower jaw from above.

Fig. 5—*Neotoma cinerea*.—Rocky Mountain rat.—No. 2159.—Fort Sarpy? Yellowstone river, Nebraska.. 499

References *a–g* as in fig. 1; *f* and *g* magnified rather more than twice.

Fig. 6—*Sigmodon berlandieri*, Baird.—Texas cotton rat.—No. 1672.—West of San Antonio... 504

Very old. References *a–g* as in fig. 1; *f* and *g* magnified rather more than three times.

Fig. 7—*Sigmodon berlandieri*, Baird.—No. 1681.—Santa Rosalia, Mexico.................. 504

Rather young. *a*—grinding surface of left upper molars; *b*—grinding surface of left lower molars. Magnified nearly three times.

PLATE LIV.

All the figures in the present plate represent the grinding surfaces of the molar teeth on the left side of the jaw. The one above the number belongs to the superior molars, the lower figure to the inferior ones.

No. 1719—*Arvicola pinetorum*, Lec.—No. $\frac{1719}{596}$.—Georgia.................................. 544

No. 1714—*Arvicola cinnamomea*, Bd.—No. $\frac{1714}{591}$.—♂. Pembina.............................. 541

No. 2211—*Neotoma mexicana*, Bd.—No. $\frac{2211}{1033}$.—San Pedro river, Sonora.................. 490

Page.

No. 626^b—*Fiber zibethicus*, L.—No. 626^b.—Carlisle, Pa........ 561
No. 1587—? *Arvicola austera*, Lec.—No. $\frac{1587}{453}$.—Calcasieu, La........ 539
No. 1306—*Reithrodon montanus*, Bd.—No. $\frac{1306}{441}$.—Rocky mountains........ 449
No. 978—*Neotoma floridana*, Say. & Ord.—No. $\frac{978}{82}$.—Charleston, S. C........ 487
No. 1595—*Arvicola townsendii*, Bach.—No. $\frac{1595}{464}$.—Shoalwater bay........ 527
No. 1694—*Neotoma cinerea*, Bd.—No. $\frac{1694}{224}$.—Milk river, Nebraska........ 499
No. 939—? *Neotoma fuscipes*, Cooper.—No. 939.—Los Angeles, California........ 495
No. 1674—*Neotoma mexicana*, Bd.—No. $\frac{1674}{289}$.—Chihuahua........ 490

PLATE LV.

Fig. 1—*Erethizon epixanthus*, Brandt.—No. 1263.—Yellow-haired porcupine.—Bill Williams' fork, New Mexico........ 569
a—under surface of skull; *b*—upper surface of skull; *c*—side of skull; *d*—side of lower jaw-; *e*—upper view of lower jaw.

Fig. 2—? *Erethizon epixanthus* —No. 822.—Upper Missouri........ 569
Upper view of skull.

Fig. 3—*Erethizon dorsatus*, F. Cuv.—Canada porcupine.—No. 3066.—Essex county, New York........ 568
Upper view of skull.

PLATE LVI.

Fig. 1—*Lepus glacialis*, Leach.—Polar hare.—No. 2277.—Newfoundland........ 577
Skull. References *a–e* as in preceding plate.

Fig. 2—*Lepus campestris*, Bach.—Gray hare.—No. 972.—Fort Union, Nebraska........ 585
References *a–e* as in preceding plate.

PLATE LVII.

Fig. 1—*Lepus callotis*, Wagler.—Jackass rabbit.—No. 1191.—Brazos Santiago, Texas, 590
Skull. References *a–e* as the preceding.

Fig. 2—*Lepus californicus*, Gray.—No. 2273.—Petaluma, California........ 594
References *a–e* as the preceding.

PLATE LVIII.

Fig. 1—*Lepus sylvaticus*, Bach.—Gray rabbit.—No. 625.—Carlisle, Pa........ 597
Skull. References *a–e* as the preceding.

Fig. 2—*Lepus audubonii*, Baird.—No. 2045.—San Francisco, California........ 608
References *a–e* as the preceding.

PLATE LIX.

Fig. 1—*Lepus aquaticus*, Bach.—Swamp rabbit.—No. 1228.—Calcasieu, La........ 612
Skull. References *a–e* as the preceding.

Fig. 2—*Lepus palustris*, Bach.—Marsh rabbit.—No. 2054.—St. Simon's island, Ga. 615
References *a–e* as the preceding.

PLATE LX.

Page.

Fig. 1—*Mephitis mephitica.*—Common skunk.—No. 670.—Carlisle........................ 195
Skull. References *a–e* as the preceding.

Fig. 2—*Mephitis varians,* Gray —Texas skunk.—No. 1117.—Eagle Pass, Texas....... 193
References *a–e* as the preceding.

Fig. 3—*Mephitis bicolor,* Gray.—Stupid skunk.—No. 2182.—Santa Clara, California, 197
References *a–e* as the preceding.

LIST OF WOOD-CUT FIGURES.

Fig. 1—*Alce americanus,* Jardine.—Moose.—No. 857.—Maine........ 632
Adult. Left horn seen from the front. Scale 5.09 inches to the inch of figure.

Fig. 2—*Alce americanus,* Jardine.—Moose.—No. 782.—Hamilton, New York........... 632
Young male of second year. Right horn from the front. Natural size 4.10 inches to the inch of the figure.

Fig. 3—*Rangifer caribou,* Aud. & Bach.—Wood caribou.—No. 900.—Isle Royale, Lake Superior.. 634
Right horn from inside. Natural size 6.30 inches to the inch of figure.

Fig. 4—*Rangifer caribou,* Aud. & Bach.—No. 1198.—Trois Rivieres, Canada.......... 634
Young, probably of the second year. Right horn viewed from the inside. Size 4 inches to the inch of the figure.

Fig. 5—*Rangifer caribou,* Aud. & Bach.. 634
The left horn of the same animal viewed from the outside. Size 3.14 inches to the inch of figure.

Fig. 6—*Rangifer caribou,* Aud. & Bach.—No. 1199... 634
Another horn from the same locality. Right side from inside. Size 3.38 inches to the inch of the figure.

Fig. 7—*Rangifer groenlandicus.*—Barren ground caribou.—No. 906.—North Greenland. 635
Male. Right horn from inside, showing the palmated brow antler. The left horn is without it. Size 7.08 inches to the inch of the figure.

Fig. 8—The same species (No. 905) from the same locality. Supposed to be the female. No palmated brow antler on either side. Right antler from inside. Size 6.83 inches to the inch of the figure... 635

Fig. 9—*Cervus canadensis,* Erxl.—Elk 639
End of the nose as seen obliquely from above and in front. The figure is to be considered only as an approximation to accuracy, having been taken from a distorted skin.

Fig. 10—*Cervus canadensis,* Erxl.—Elk 639
Under surface of left front hoof.

Fig. 11—*Cervus canadensis,* Erxl.—Elk.—No. 3253.—California 641
Right antler from inside. Size 9.90 inches to the inch of the figure.

Fig. 12—*Cervus virginianus,* Bodd.—Deer.. 644
End of the nose as seen obliquely from above and in front. The figure is a mere diagram, having been taken from a much distorted skin.

Page.

Fig. 13—*Cervus virginianus*, Bodd.—Deer.—No. 3062.—Essex county, New York..... 648
Right horn from inside. Size 4.16 inches to the inch of the figure.

Fig. 14—*? Cervus leucurus*, Dougl.—White-tailed deer.—No. 2920.—Yellowstone river 651
Right horn from inside. Size, 3.68 inches to the inch of the figure.

Fig. 15—*? Cervus leucurus*, Dougl.—No. 658.—Upper Missouri.............................. 658
Left horn from inside. Size, 5.04 inches to the inch of the figure. This horn is remarkable for the amount of flattening and consequent elongation, antero-posteriorly, of the cross section at any point.

Fig. 16—*? Cervus leucurus*, Dougl.—No. 2928.—White Earth river, Nebraska......... 651
Both horns from the left. Size, 3.91 inches to the inch of the figure. This horn is much compressed antero-posteriorly, at its terminal or upper half, as in the moose or reindeer. It may possibly belong to a *C. macrotis*, but is labelled by Lieut. Warren *C. Virginianus*, and most probably is the white-tail deer of the Upper Missouri.

Fig. 17—*Cervus leucurus*, Dougl.—No. 3203.—Whidby's island, Puget's Sound........ 651
The true *C. leucurus* of Douglass. Right horn from inside. Size, 5.09 inches to the inch of the figure.

Fig. 18—*? Cervus leucurus*, Dougl.—No. 829—Big Sioux, Nebraska........................ 652
Head from before, showing the remarkable development of snags. Size, 6.20 inches to the inch of the figure.

Fig. 19—*Cervus macrotis*, Say.—Mule deer.—No. 831.—Big Sioux, Nebraska............ 657
Right horn from inside. Size, 8.23 inches to the inch of the figure.

Fig. 20—*Cervus macrotis*, Say.—No. 2918.—Yellowstone.. 657
Right horn from inside. Size, 5 inches to the inch of the figure.

Fig. 21—*Cervus columbianus*, Rich.—Black-tailed deer.—No. 1618.—Monterey, Cal... 660
Right horn from inside. Size, 8.30 inches to the inch of the figure.

Fig. 22—*Cervus columbianus*, Rich.—No. 3204.—Puget's Sound................. 660
Right horn from inside, showing the absence of fork on one side, as well as of basal snag. Size, 5.74 inches to the inch of the figure.

Fig. 23—*Antilocapra americana*, Ord.—Prong-horned antelope............................... 668
End of muzzle, as viewed from above and in front, (taken from a well mounted head Fig. 24. Under surface of left front hoof.

Fig. 24.—*Ovis montana*, Cuv.—Bighorn.. 674
Male. End of muzzle, as viewed from above and in front, (taken from the mounted specimens brought by Captain Stansbury.)

Fig. 25—Under surface of left front hoof.. 674

Fig. 26—*Ovis montana*, Cuv.—Bighorn.—Upper Missouri.. 675
Male. Left horn from the left side.

Fig. 27—The same, from the front........... 675

Fig. 28—Base of the horn... 675
Scale, 4 inches to the inch of the figure.

Fig. 29—*Ovis montana*, Cuv.—No. 2593.—Bridger's Pass.............. 676
Female. Left horn from the left side. Size, 3.42 inches to the inch of the figure.

Pgae.

Fig. 30—*Ovis montana*, Cuv.—No. 1608.—San Francisco mountains, New Mexico..... 677
Male. Left horn from left side.
Fig. 31—Ditto, from the front.. 677
Fig. 32—Base of the horn... 677
Size, 5.61 inches to the inch of the figure.
Fig. 33—*Ovibos moschatus.*—Musk ox... 681
End of muzzle from above and in front. This figure is merely a rude outline, having been hastily copied from the mounted specimen in the Philadelphia Academy... 681
Fig. 34—*Bos americanus.*—Buffalo.. 683
End of nose from above and in front.
Fig. 35—Under surface of left front hoof.. 683

SYSTEMATIC LIST OF ILLUSTRATIONS.

SORICINAE.

Neosorex navigator, Cooper.—Animal and skull, Plate XXVI, No. 629.
Sorex trowbridgii, Baird.—Animal and skull, Plate XXVI.
 vagrans, Cooper.—Details of external form, Plate XVIII, figs. 5 and 6. Animal and skull, Plate XXVI, No. 1675.
 suckleyi, Baird.—Animal and skull, Plate XXVII, No. 1677.
 pachyurus, Baird.—Animal and skull, Plate XXVII, No. 1674.
 forsteri, Rich.—Details, Plate XXX, fig. 4.
 platyrhinus, Wagner.—Animal and skull, Plate XXVIII, No. 1699.
 cooperi, Bach.—Animal and skull, Plate XXVI, No. 2047.
 haydeni, Baird.—Animal and skull, Plate XXVII, No. 1685.
 hoyi, Baird.—Animal and skull, Plate XXVIII, No. 1688.
 thompsoni, Baird.—Animal and skull, Plate XXVII, No. 1686.
Blarina talpoides, Gray.—Details of external form, Plate XVIII, fig. 4, and Plate XXX, fig. 6.
 brevicauda, Gray.—Details, Plate XXX, fig. 5.
 carolinensis.—Details, Plate XXX, fig. 8.
 angusticeps, Baird.—Details, Plate XXX, fig. 7.
 cinerea.—Details, Plate XXX, figs. 9 and 10.
 exilipes, Baird.—Animal and skull, Plate XXVIII, No. 2157.
 berlandieri, Baird.—Animal and skull, Plate XXVIII, No. 2159.

TALPINAE.

Scalops aquaticus.—Details of external form, Plate XVII, fig. 1.
 townsendii, Bach.—Details of external form, Plate XVII, fig. 5, Plate XXX, fig. 1.
 townsendii, Bach., var. *californicus*.—Details of external form, Plate XVII, figs. 2 and 6; Plate XXX, fig. 3.
 breweri, Bach.—Details of external form, Plate XVII, figs. 3–4; Plate XXX, fig. 2.
Talpa europaea, L.—Muzzle, Plate XVII, fig. 7.
Condylura cristata, Ill.—Details of external form, Plate, XVIII, figs. 1–2.
Urotrichus gibbsii, Baird.—Details of external form, Plate XVIII, fig. 3. Animal and skull, Plate XXVIII, No. 662.

FELINAE.

? *Felis concolor*.—Animal, very young, Plate II, fig. 2.
Lynx fasciatus, Raf.—Animal, Plate II, fig. 1.

LUPINAE.

Canis occidentalis, var. *griseo-albus*.—Skull, Plate XXXI.

VULPINAE.

Vulpes fulvus, var. *fulvus*.—Skull, Plate XXXII.
  macrourus, Baird.—Skull, Plate XXXIII.
  velox, Aud. and Bach.—Skull, Plate XXXIV.
  virginianus, Rich.—Skull, Plate XXXV fig. 1.
  littoralis, Baird.—Animal, Plate I. Skull, Plate XXXV, fig. 2.

MARTINAE.

Mustela pennantii, Erxl.—Skull and gum folds, Plate XXXVI, fig. 1.
  americana, Turton.—Skull, Plate XXXVI, fig. 2, and Plate XXXVII, fig. 1.
Putorius cicognanii.—Details, Plate XIX, fig. 4.
  richardsonii, Bp.—Details, Plate XIX, fig. 2–6.
  noveboracensis, DeKay.—Skull, Plate XXXVI, fig. 3.
  frenatus, Aud. & Bach.—Details, Plate XIX, fig. 5.
Putorius xanthogenys.—Animal, Plate III, fig. 1. Details, Plate XIX, fig. 3.
  vison, Rich.—Skull, Plate XXXVII; fig. 2, adult, and fig. 3, young.

LUTRINAE.

Lutra canadensis, Sab.—Details, Plate XIX, fig. 7. Skull, Plate XXXVIII.
  californica, Gray.—Details, Plate XIX, fig. 8.

MELINAE.

Mephitis varians, Gray.—Skull, Plate LX, fig. 2.
  mesoleuca, Licht.—Details, Plate XIX, fig. 1. Skull, Plate XXXIX, fig. 3.
  mephitica, Shaw.—Plate LX, fig. 1.
  bicolor, Gray.—Animal, Plate XXIX. Skull, Plate LX, fig. 3.
Taxidea americana, Waterh.—Upper jaw, Plate XXXIX, fig. 2.
  berlandieri, Baird.—Skull, Plate XXXIX, fig. 7.

SUBURSINAE.

Procyon hernandezii, Wagler.—Skull, rather young, Plate XL.

URSINAE.

Ursus horribilis, Ord.—Skull, very old, Plate XLI. Skull, rather young, Plate XLII.
  arctos, L.—Skull rather immature, Plate XLIII, figs. 1–9.
  americanus, Pallas.—Skull, Plate XLIII, figs. 10–13.
  maritimus, Linn.—Skull, Plate XLIV.

SCIURINAE.

Sciurus cinereus, Linn.—Skull, Plate XLVIII, fig. 2.
  carolinensis, Gm.—Skull, Plate XLV, fig. 2.
  hudsonius, Pallas.—Skull, Plate XLVI, fig. 1.
  fremontii, Towns.—Animal, Plate VI.
  douglassii, Bach.—Details, Plate XX, fig. 1. Skull, Plate XLV, fig. 3.
  douglassii, Bach., var. *suckleyi*.—Animal, Plate VII.
Tamias striatus.—Skull, Plate XLVI, fig. 2.
  quadrivittatus, Rich.—Details, Plate XX, fig. 2.
  townsendii.—Skull, Plate XLV, fig. 4.
  townsendii, Bach., var. *Cooperi*.—Animal, Plate V, fig. 2.
Spermophilus beecheyi, Rich.—Animal, Plate III, fig. 2. Skull, Plate XLVI, fig. 3.
  douglassii, Rich.—Skull, Plate XLV, fig. 1.
  grammurus, Bachman.—Animal, Plate IV, fig. 1.
  lateralis, Rich.—Details, Plate XX, fig. 3. Skull, Plate XLV, fig. 5.
  harrisii, Aud. and Bach.—Skull, Plate XLVIII, fig. 3.
  franklini, Rich.—Skull, Plate XLVI, fig. 4.
Cynomys ludovicianus.—Skull and teeth, Plate XLVII, figs. 2–3.
  gunnisonii, Baird.—Animal, Plate IV, fig. 2. Skull, Plate XLVII, fig. 4.
Arctomys monax, Gmelin.—Skull, Plate XLIX, fig. 1.
  flaviventer, Bachman.—Skull, Plate XLVII, fig. 1.

CASTORINAE.

Aplodontia leporina, Rich.—Details, Plate XX, fig. 4. Skull, Plate XLIX, fig. 2.
Castor canadensis, Kuhl.—Skull, Plate XLVIII, fig. 1.

SACCOMYINAE.

Geomys bursarius, Rich.—Details, Plate XXII, fig. 1. Skull, Plate L, fig. 2.
  breviceps, Baird.—Skull, Plate LII, fig. 2.
  pinetis, Rafinesque.—Details, Plate XXII, fig. 3.
  castanops, Leconte.—Animal, Plate X, fig. 2. Skull, Plate L, fig. 1.
  hispidus, Leconte.—Details, Plate XXII, fig. 4.
Thomomys bulbivorus.—Animal, with details of external form, Plate XI: Skull, Plate L, fig. 3, and Plate LII, fig. 1.
  laticeps, Baird.—Animal, with details, Plate XII, fig. 1.
Thomomys borealis.—Details, Plate XXII, fig. 2.
  rufescens, Maxim.—Animal, Plate X, fig. 1.
  fulvus.—Animal, with details, Plate XII, fig. 2.
Dipodomys ordii, Woodhouse.—Animal, Plate V, fig. 1. Details, Plate XXI, fig. 1. Skull much enlarged, Plate LI, fig. 1. Natural size, fig. 2.
  agilis, Gambel.—Animal, Plate IX, fig. 1.
Perognathus penicillatus, Woodhouse.—Details, Plate XX, fig. 5.
  hispidus, Baird.—Skull, Plate LI, fig. 4.

Perognathus monticola, Baird.—Skull, Plate LI, fig. 3.
    flavus, Baird.—Animal, Plate VIII, fig. 2. Details, Plate XXI, fig. 3.

DIPODINAE.

Jaculus hudsonius.—Details, Plate XXI, fig. 5.

MURINAE.

Mus tectorum, Savi.—Skull, Plate LII, fig. 6.
Reithrodon montanus, Baird.—Teeth, Plate LIV, No. 1306.
Hesperomys texanus, Woodhouse.—Animal, Plate VIII, fig. 1. Skull, Plate LII, fig. 5.
    boylii, Baird.—Animal, Plate VIII, fig. 3. Skull, Plate LII, fig. 3.
    palustris, Wagner.—Skull, Plate LII, fig. 4.
Neotoma floridana, Say. and Ord.—Skull, Plate LII, fig. 2.
    mexicana, Baird.—Teeth, Plate LIV, No. —— and No. 1674.
    fuscipes, Cooper.—Skull, Plate LIII, fig. 1. Teeth, Plate LIV, No. 936.
    occidentalis, Cooper.—Animal, Plate IX, fig. 2. Details, Plate XXI, fig. 4. Skull, Plate LIII, fig. 3.
    cinerea.—Skull, Plate LIII, fig. 5. Teeth, Plate LIV, No. 1694.
    magister, Baird.—Lower jaw, Plate LIII, fig. 4.
Sigmodon berlandieri, Baird.—Skull, Plate LIII, figs. 6–7.

ARVICOLINAE.

Arvicola townsendii, Bachman.—Teeth, Plate LIV, No. 1595.
    montana, Peale.—Details, Plate XXI, fig. 2.
    austera, Lec.—Teeth, Plate LIV, No. 1587.
    cinnamonea, Baird.—Teeth, Plate LIV, No. 1714.
    pinetorum, Leconte.—Teeth, Plate LIV, No. 1719.
Fiber zibethicus, Cuv.—Teeth, Plate LIV, No. 626.

HYSTRICINAE.

Erethizon dorsatus.—Upper view of skull, Plate LV, fig. 3.
    epixanthus, Brandt.—Skull, Plate LV, figs. 1–2.

LEPORINAE.

Lepus glacialis, Leach.—Skull, Plate LVI, fig. 1.
    washingtonii, Baird.—Animal, Plate XV.
    campestris, Bach.—Skull, Plate LVI, fig. 2.
    callotis, Wagler.—Skull, Plate LVII, fig. 1.
    californicus, Gray.—Skull, Plate LVII, fig. 2.
    sylvaticus, Bach.—Skull, Plate LVIII, fig. 1.
    audubonii, Baird.—Animal, Plate XIII. Skull, Plate LVIII, fig. 2.
    trowbridgii, Baird.—Animal, Plate XIV.
    aquaticus, Bach.—Skull, Plate LIX, fig. 1.
    palustris, Bach.—Skull, Plate LIX, fig. 2.

CERVINAE.

Alce americanus, Jardine.—Horns, adult, wood-cut, fig. 1; young, fig. 2, p. 632.
Rangifer caribou, Aud. & Bach.—Horns, adult, wood-cut, fig. 3; young, figs. 4, 5 & 6, p. 634.
    groenlandicus.—Horns, adult male, wood-cut, fig. 7; adult female? fig. 8, p. 635.
Cervus canadensis, Erxl.—Muzzle, wood-cut, fig. 9; hoof, fig. 10, p. 639; horns, fig. 11, p. 641.
    virginianus, Boddaert.—Feet, Plate XXIV, fig. 1; muzzle, wood-cut, fig. 12, p. 644; horns, fig. 13, p. 648.
    leucurus, Douglass.—Horns, adult, wood-cut, figs. 14, 15, 17, p. 651; fig. 18, p. 652. ?Young, fig. 16, p. 651.
    mexicanus, Gmelin.—Feet, Plate XXIV, fig. 2.
    macrotis.—Feet, Plate XXIII, fig. 1. Horns, wood-cut, figs. 19–20, p. 657.
    columbianus, Rich.—Feet, Plate XXIII, fig. 2. Horns, wood-cut, figs. 21–22, p. 660.

ANTILOPINAE.

Antilocapra americana, Ord.—Animal, Plate XVI; various horns, Plate XXX; muzzle and hoof, wood-cut, figs. 23–24, p. 668.
Capella rupicapra.—Horns, Plate XXV, figs. 1854 and 882.

OVINAE.

Ovis montana, Cuvier.—Muzzle and hoof, wood-cut, figs. 24–25, p. 674. Horns, male and female, wood-cut, figs. 26–29, p. 675. Horns of male, figs. 30–32, p. 677.

BOVINAE.

Ovibos moschatus, Blainville.—Muzzle, wood-cut, fig. 33, p. 681.
Bos americanus, Gmelin.—Muzzle and hoof, wood-cut, figs. 34–35, p. 683.

Pacific R. R. Survey

Mammals

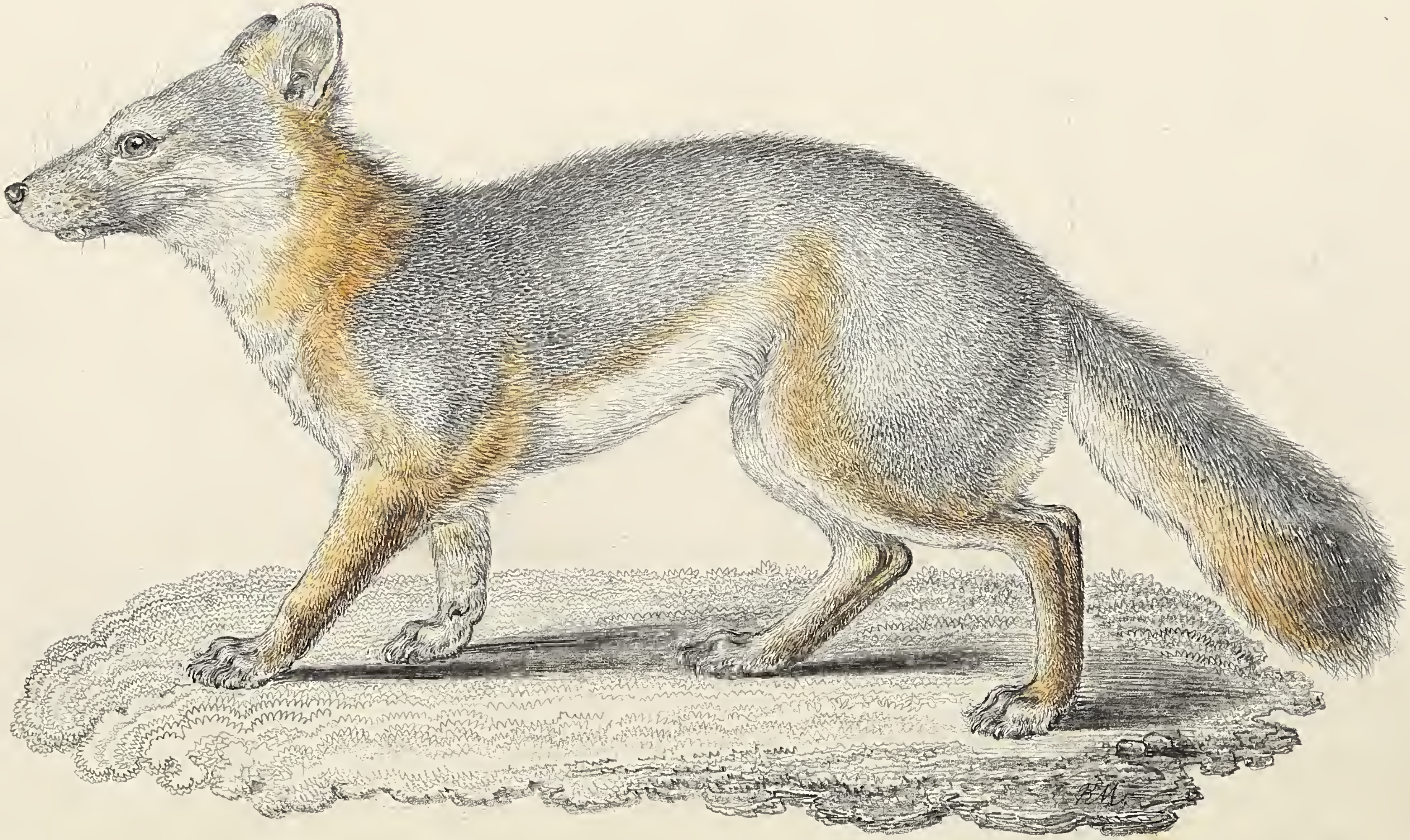
Plain plates

1 – 60.

170670

Newberry, J. S.

S. W. May 1, 56

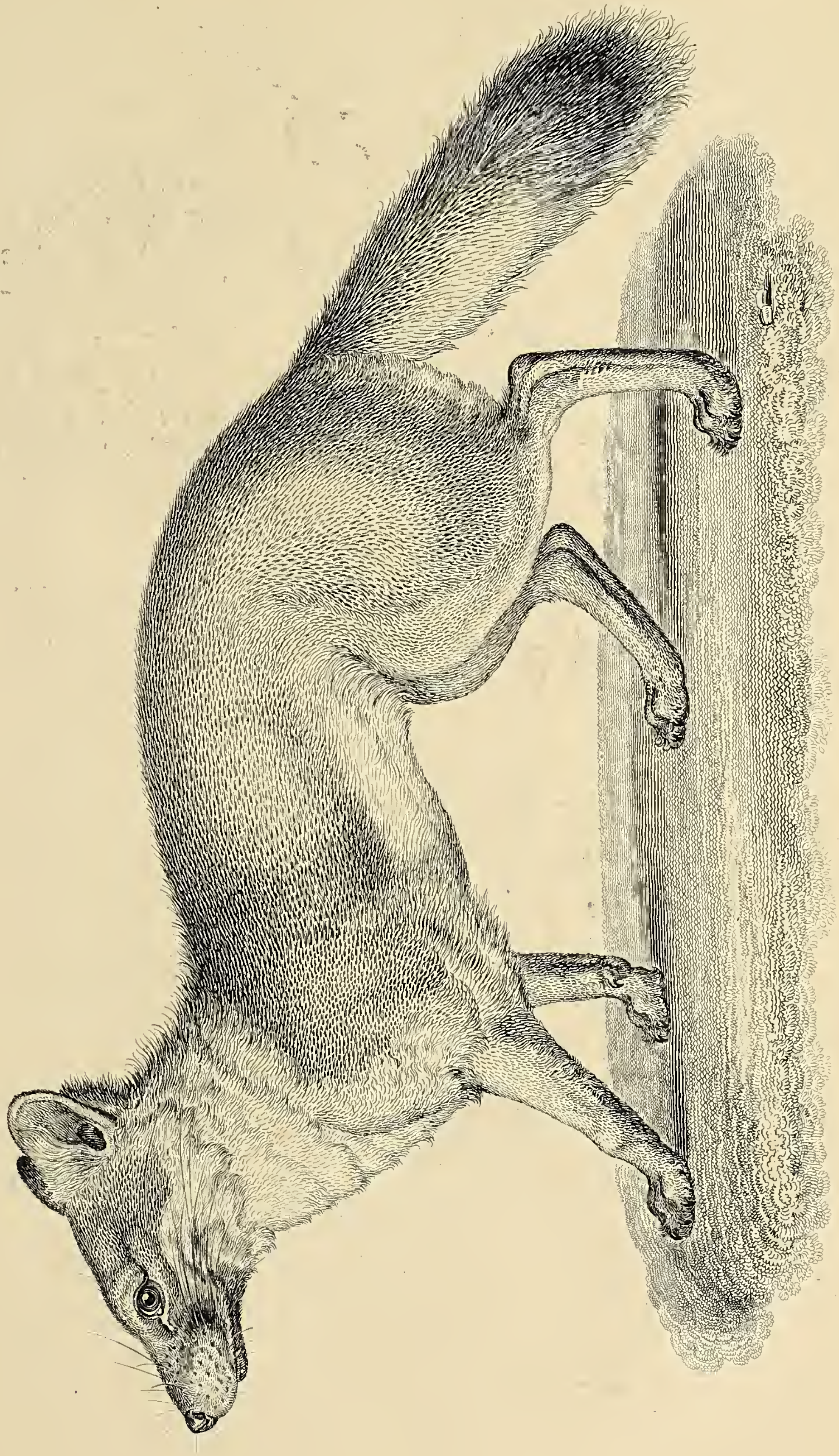


Sichard & Metzeroth 1856

Vulpes littoralis. San Miguel
3

T

U. S. P. R. R. Ex. & Surveys. — Cal. & Oregon. Mammals: — Plate I



J. H. Richard del. R. Metzeroth sc.

Fig. 2.

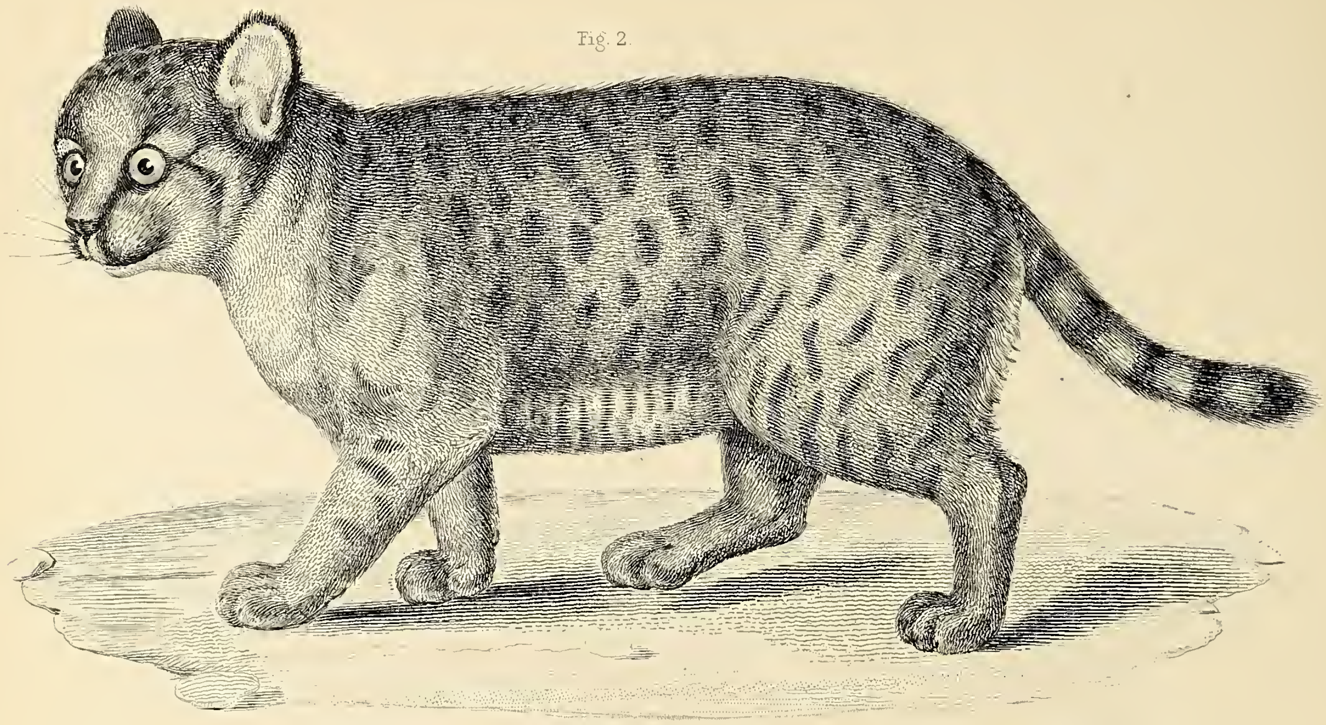
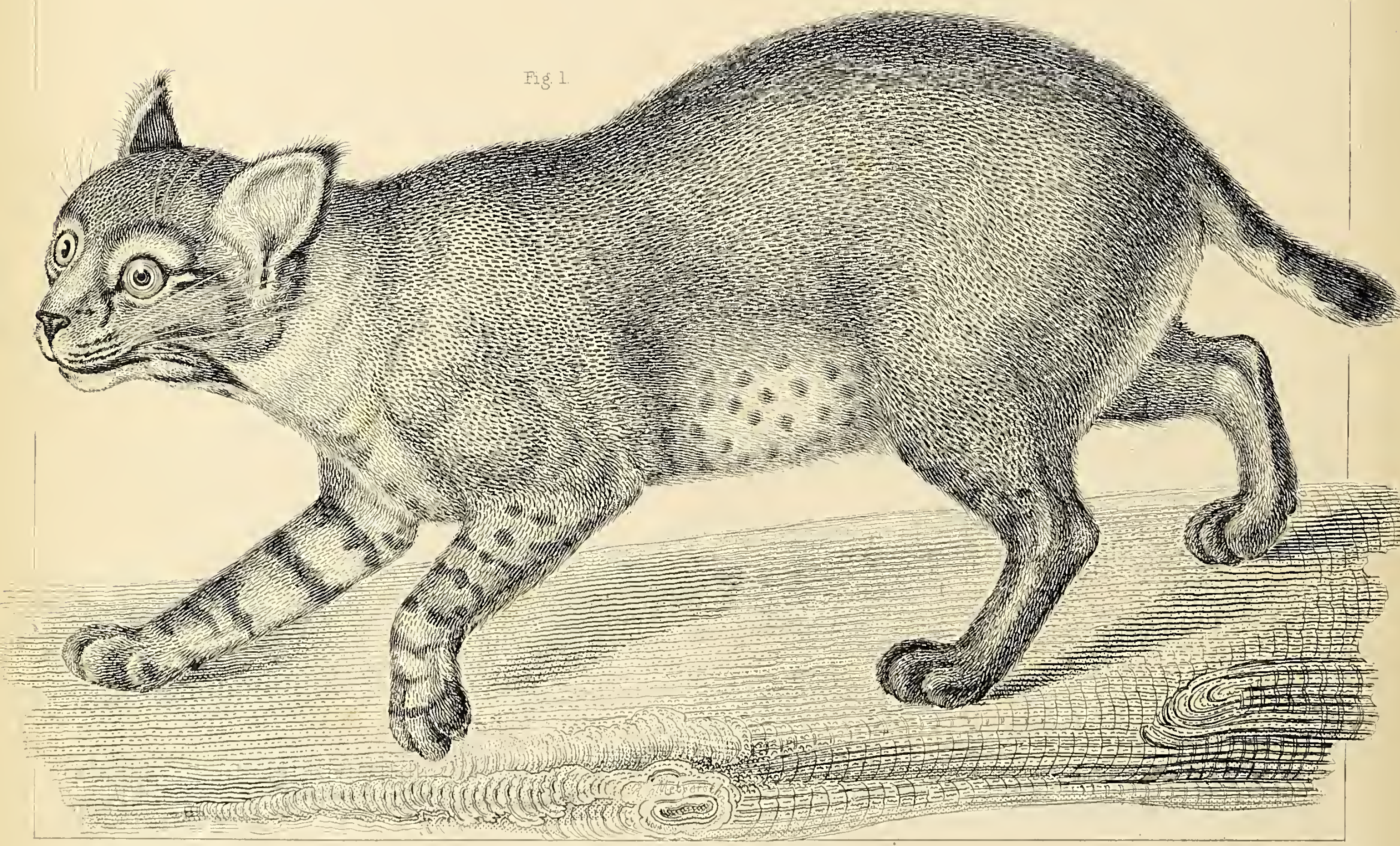
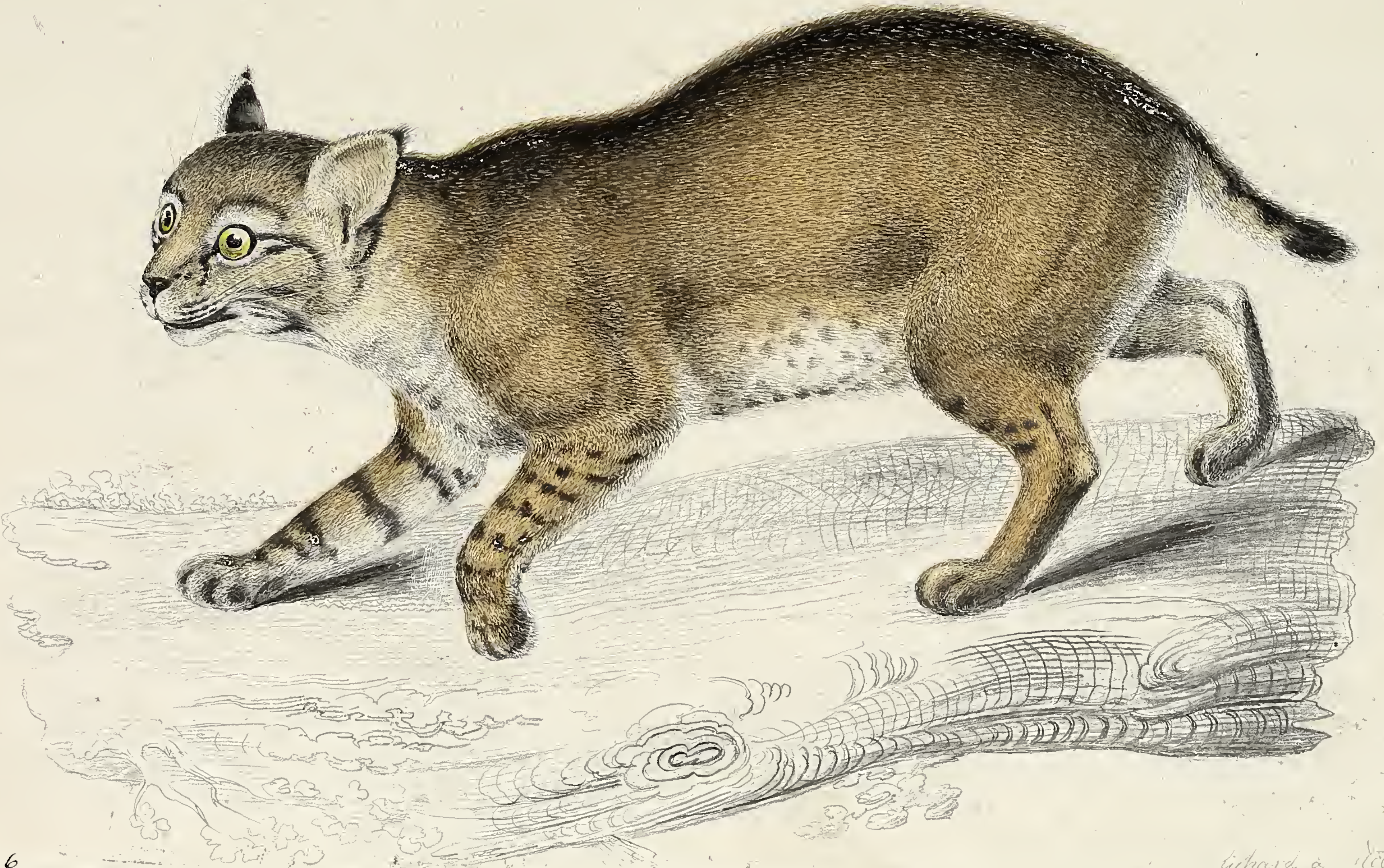


Fig. 1.



J.H.Richard del. R.Metzeroth sc.

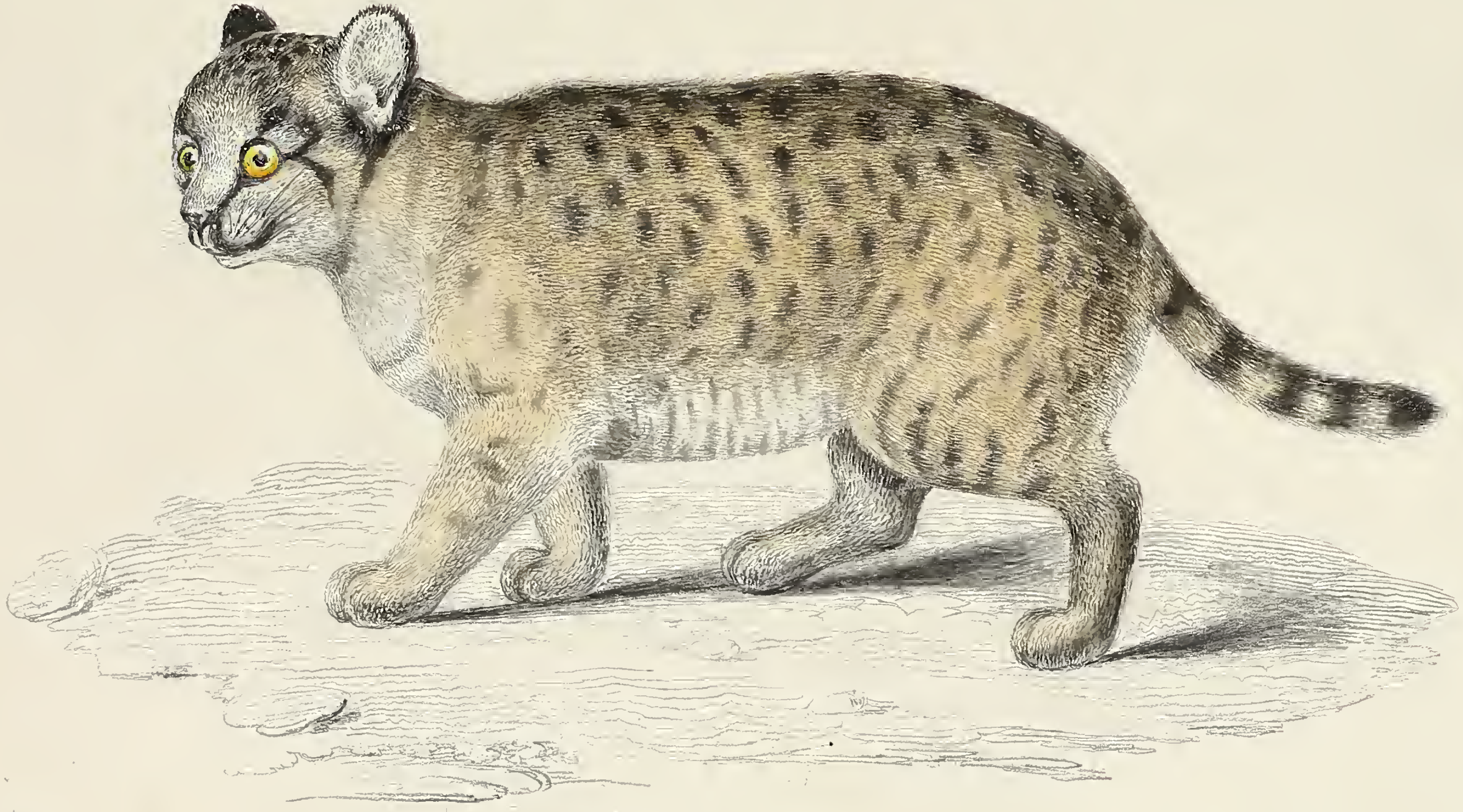


1166

Lynx fasciatus

[illegible]

[illegible]



? Lynx

[illegible]

Stevens

Fig. 1.

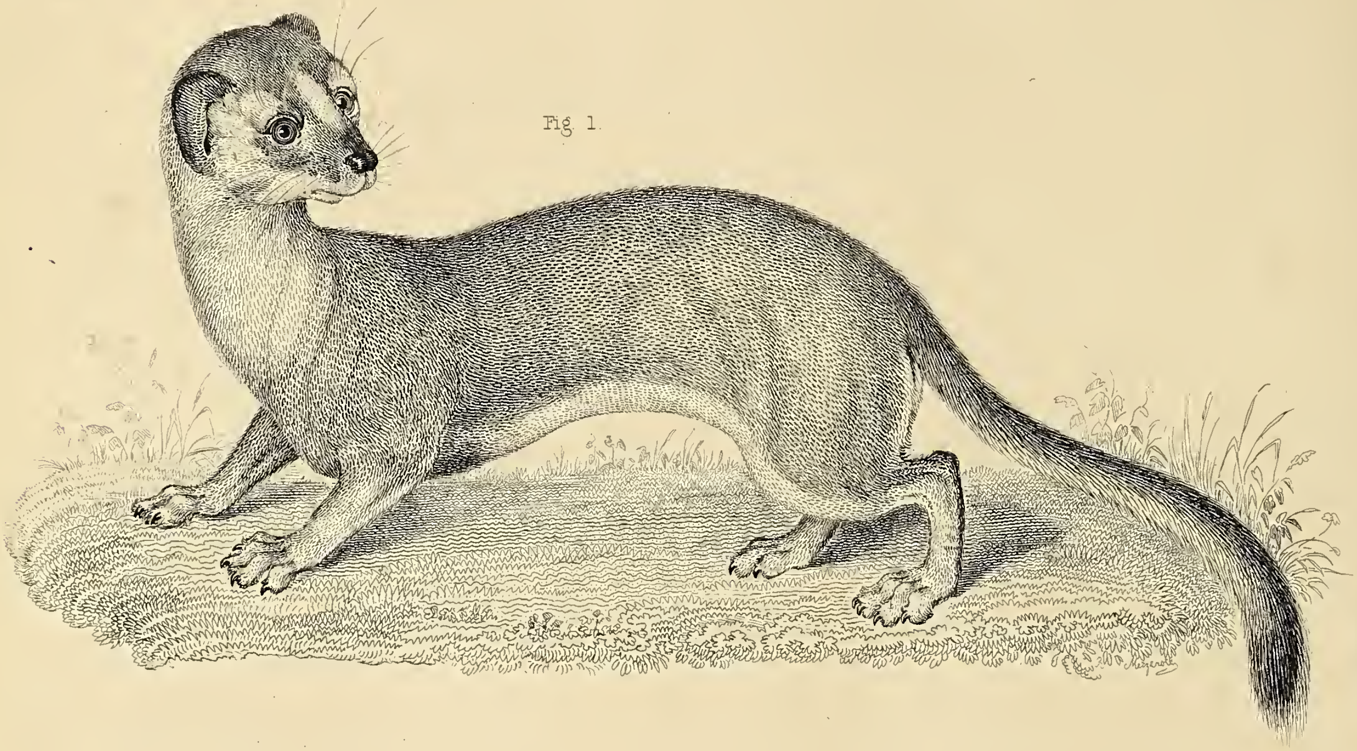
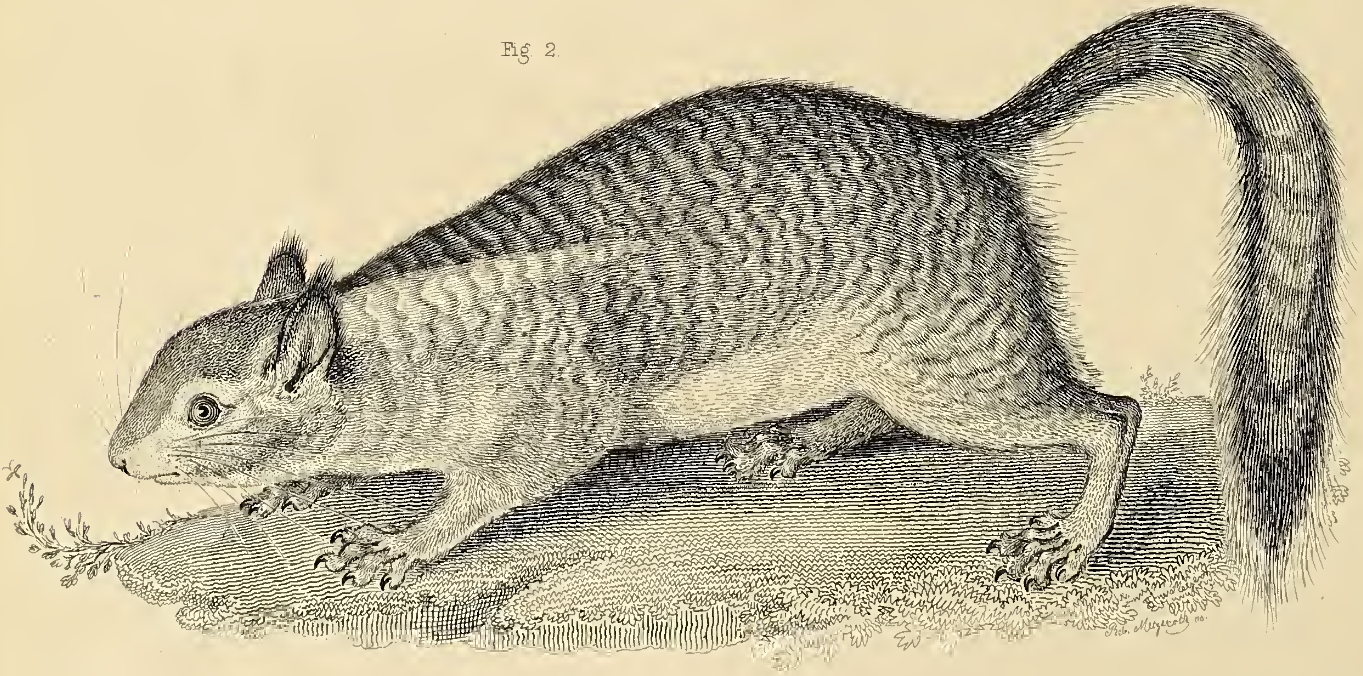
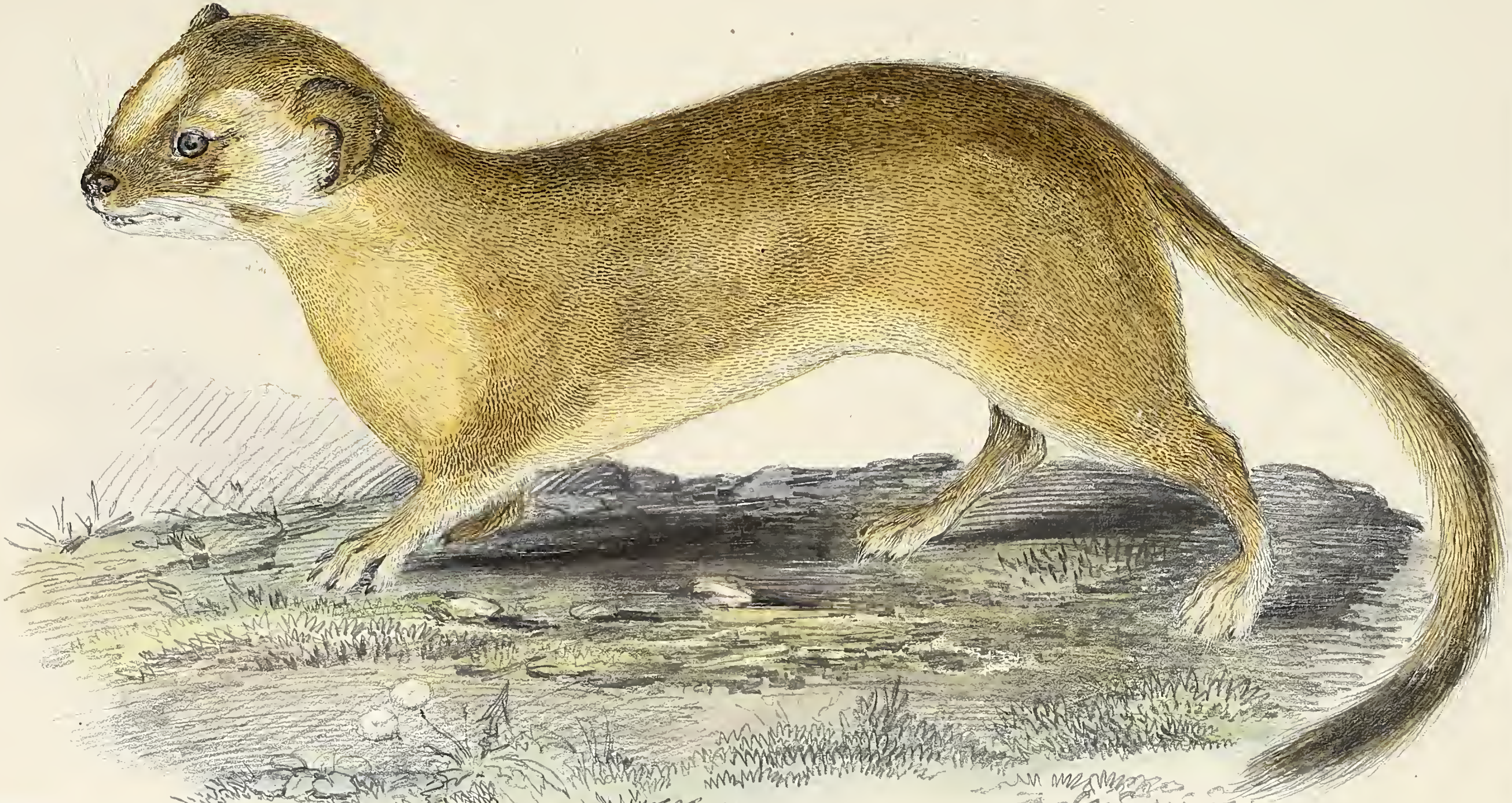


Fig. 2.



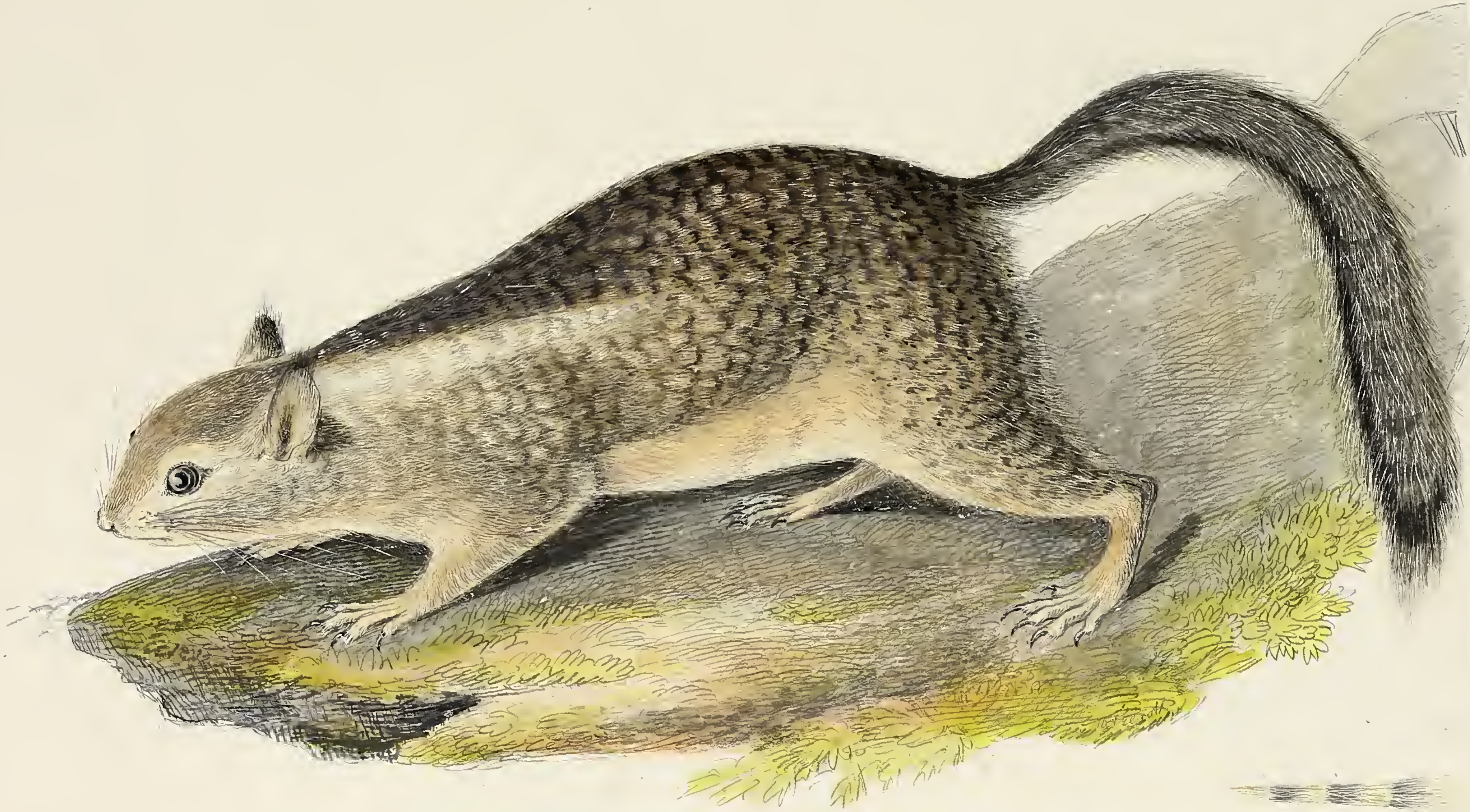
J. H. Richard del.

R. Metzeroth sc.



Putorius xanthogenys
California

470.



Spermophilus beecheyi. Rich. Tejon Valley. .XWill. 470.

Fig. 1.

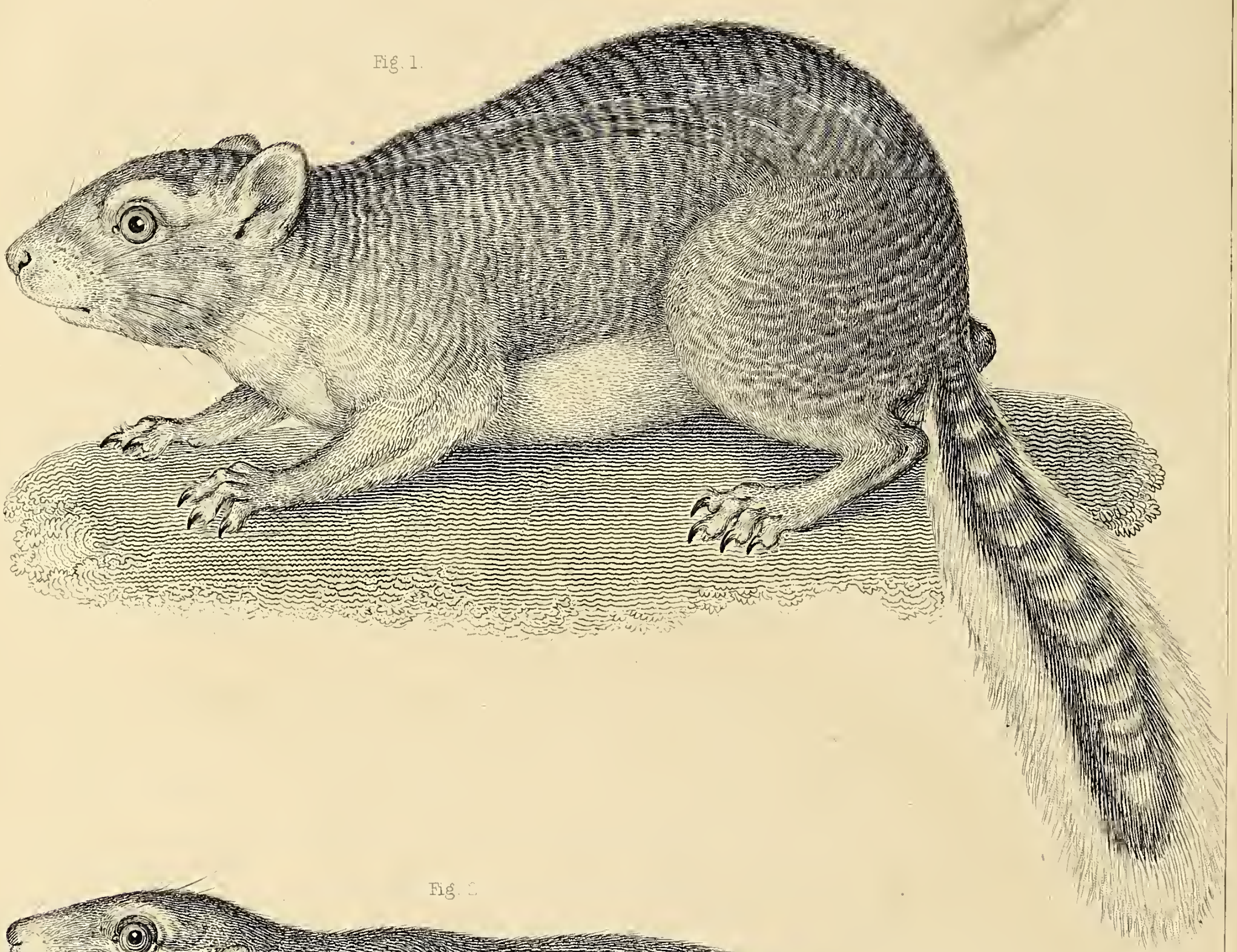
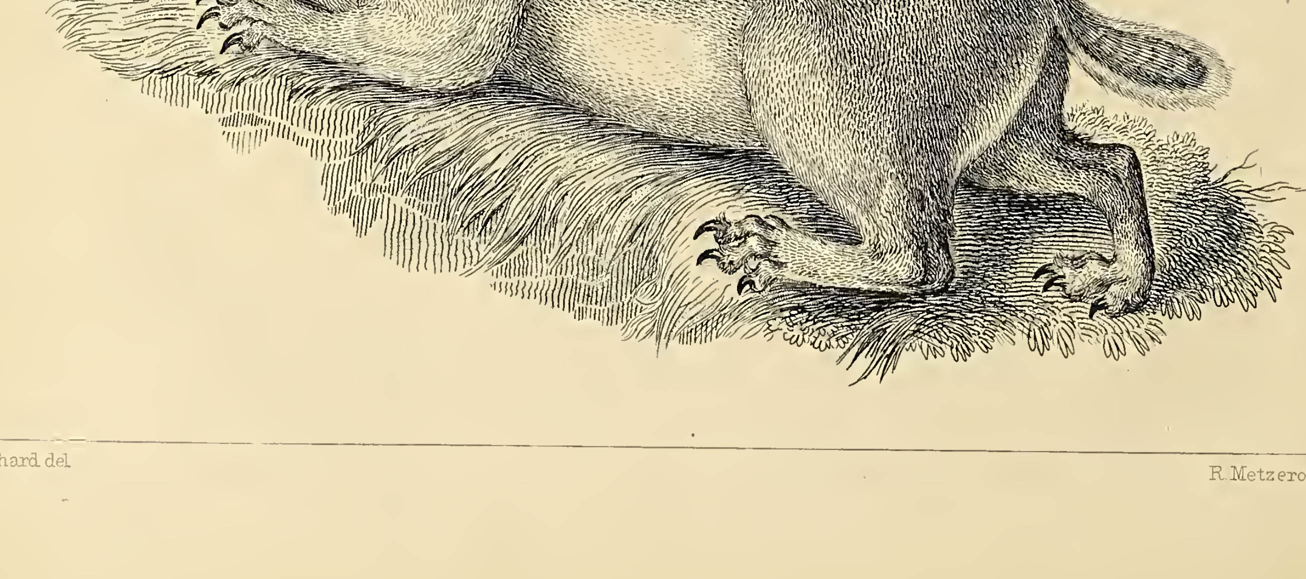


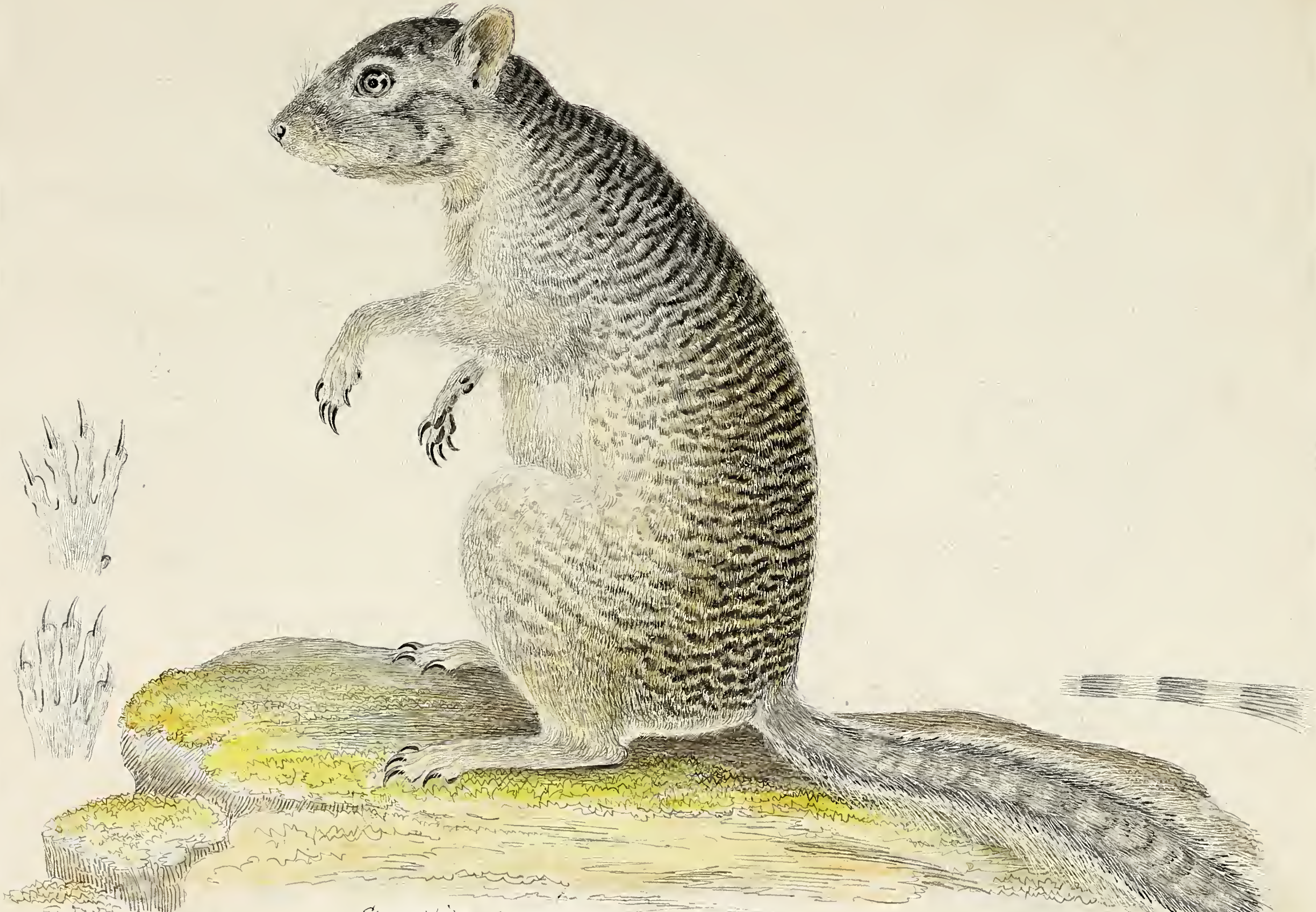
Fig. 2.



J. H. Richard del.

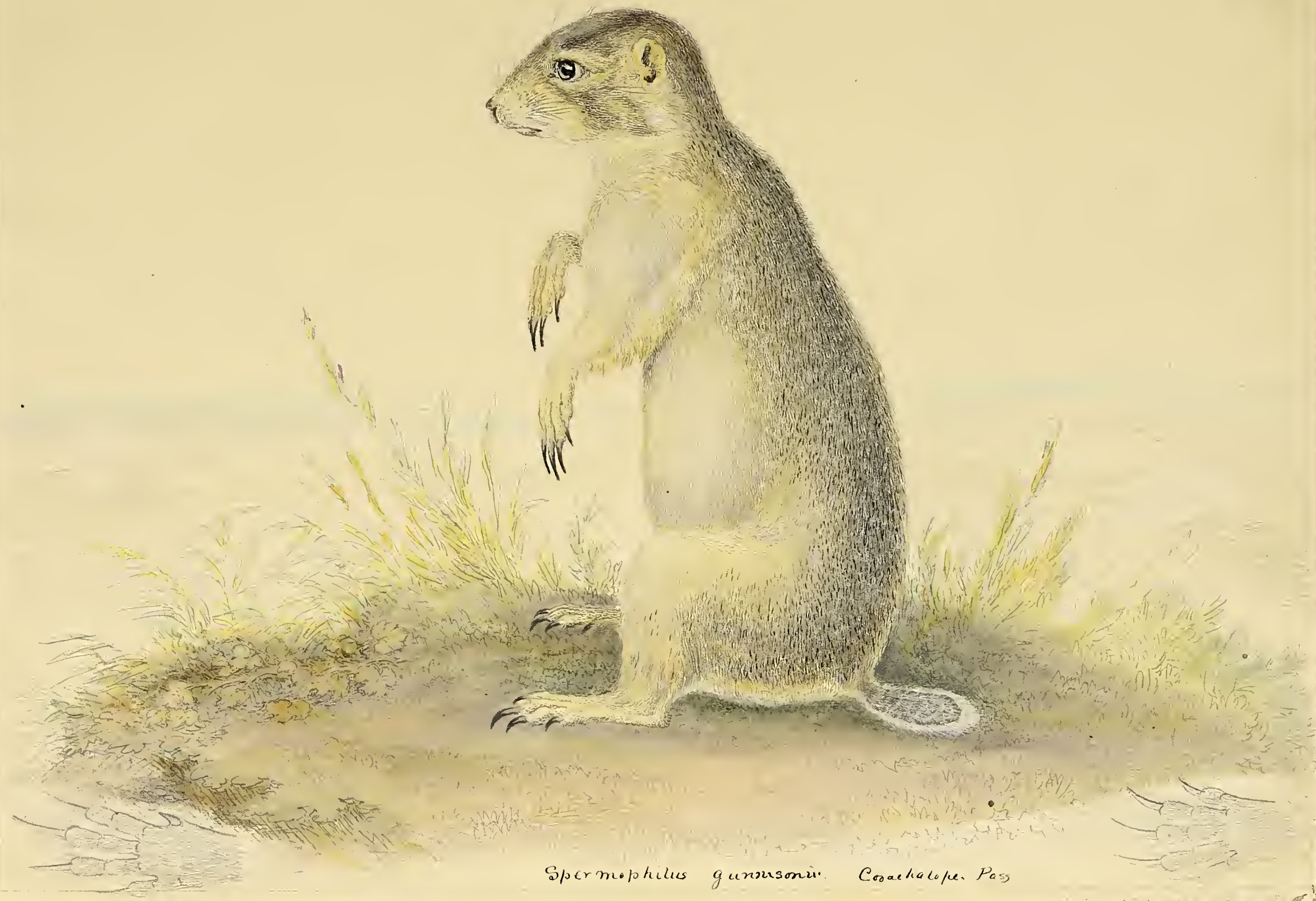
R. Metzeroth sc.

IV.



Spermophilus grammurus. W. Texas.

J. H. Richard & Rollitzereth.



Spermophilus gunnisonii. Cooachalope. Pass

Fig. 1.

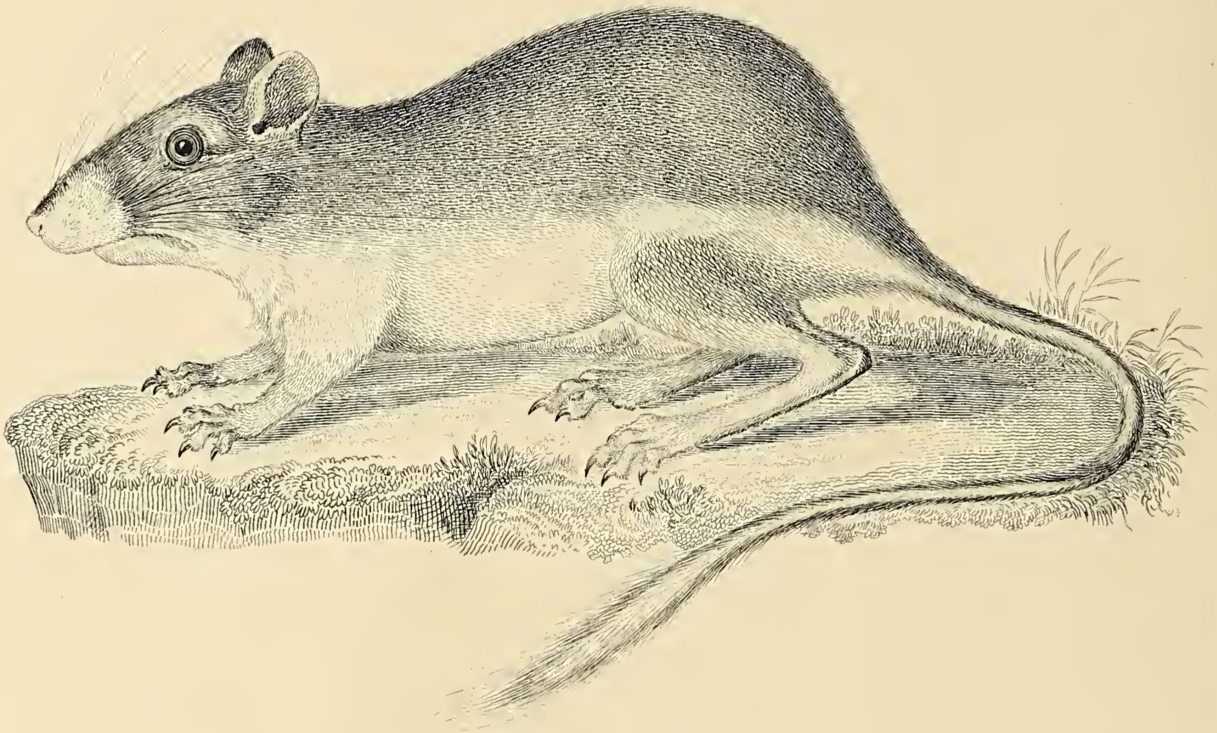
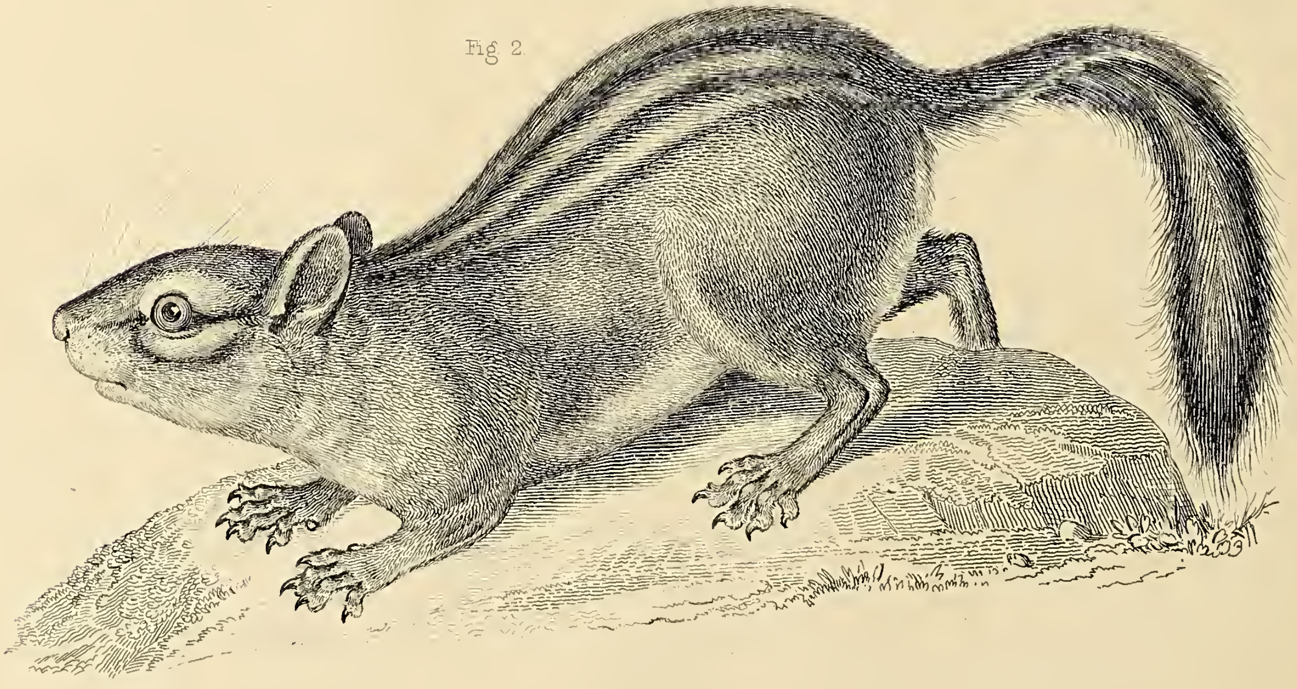


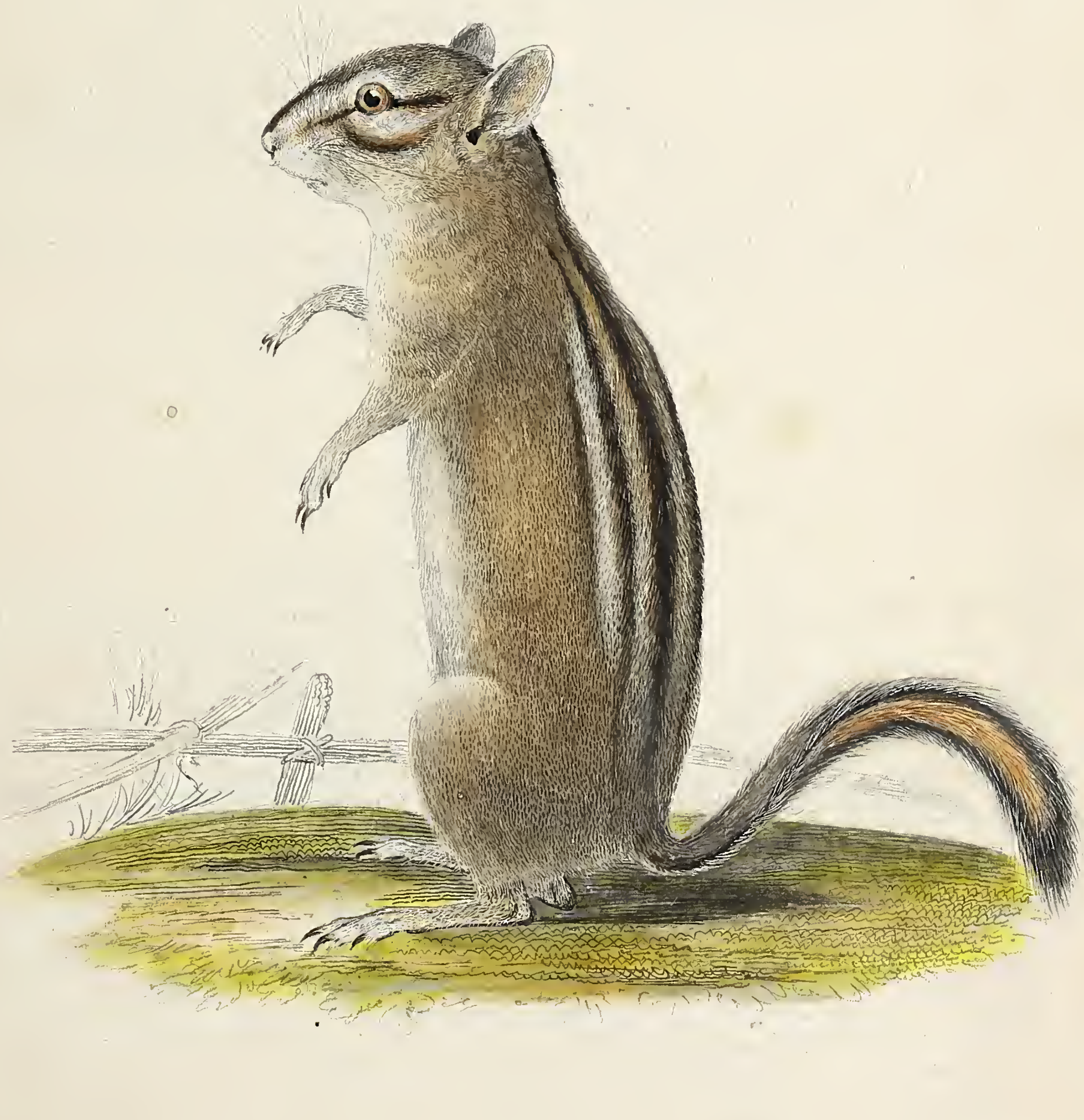
Fig. 2.



J.H.Richard del. R.Metzeroth sc.

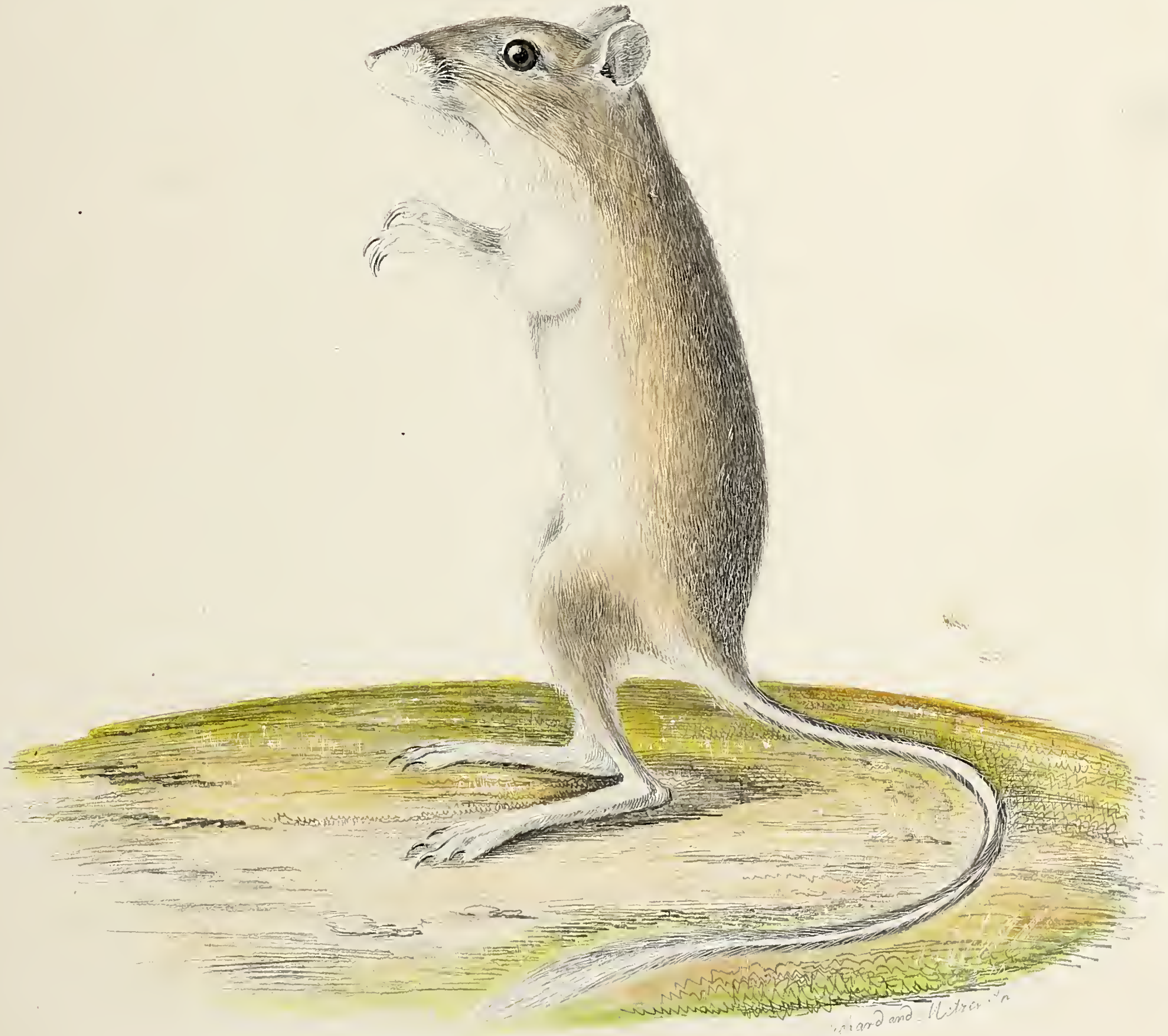
✓

212

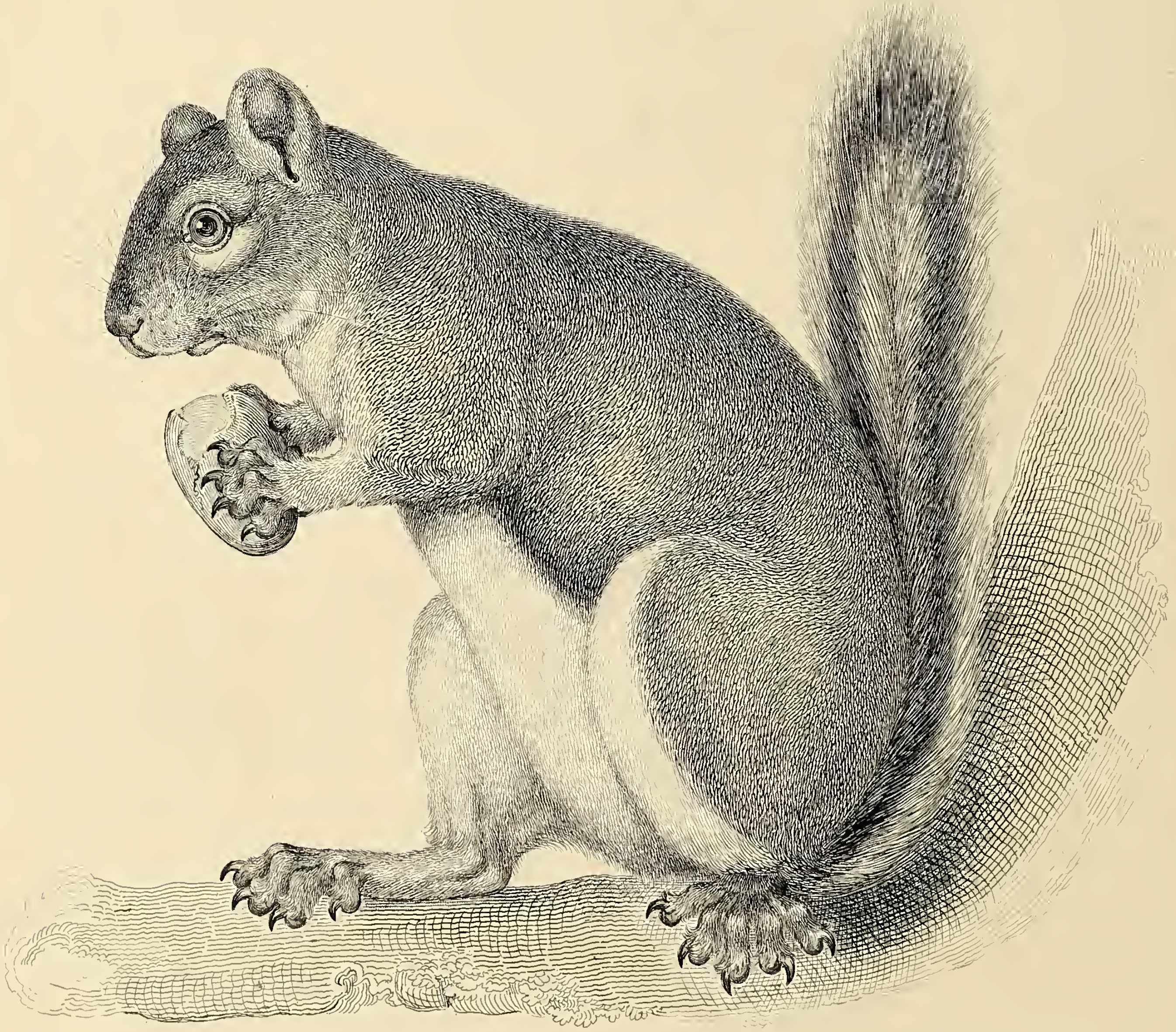


Tamias cooperi, Bd. 212

W. T. cooper Ri [illegible]



Dipodomys montanus, Bd. Rio Grande valley.

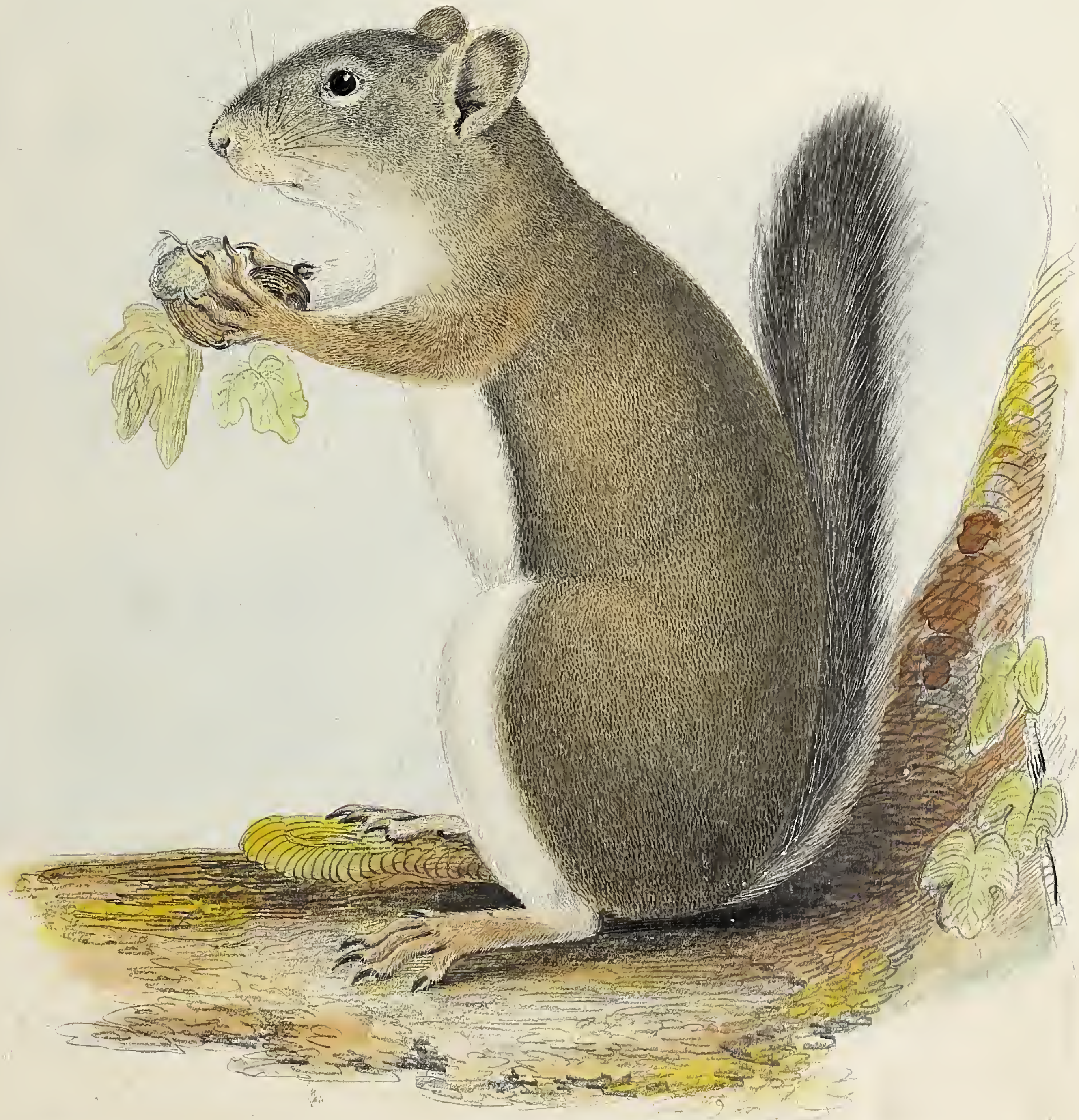


J. H. Richard del.

R. Metzeroth sc.

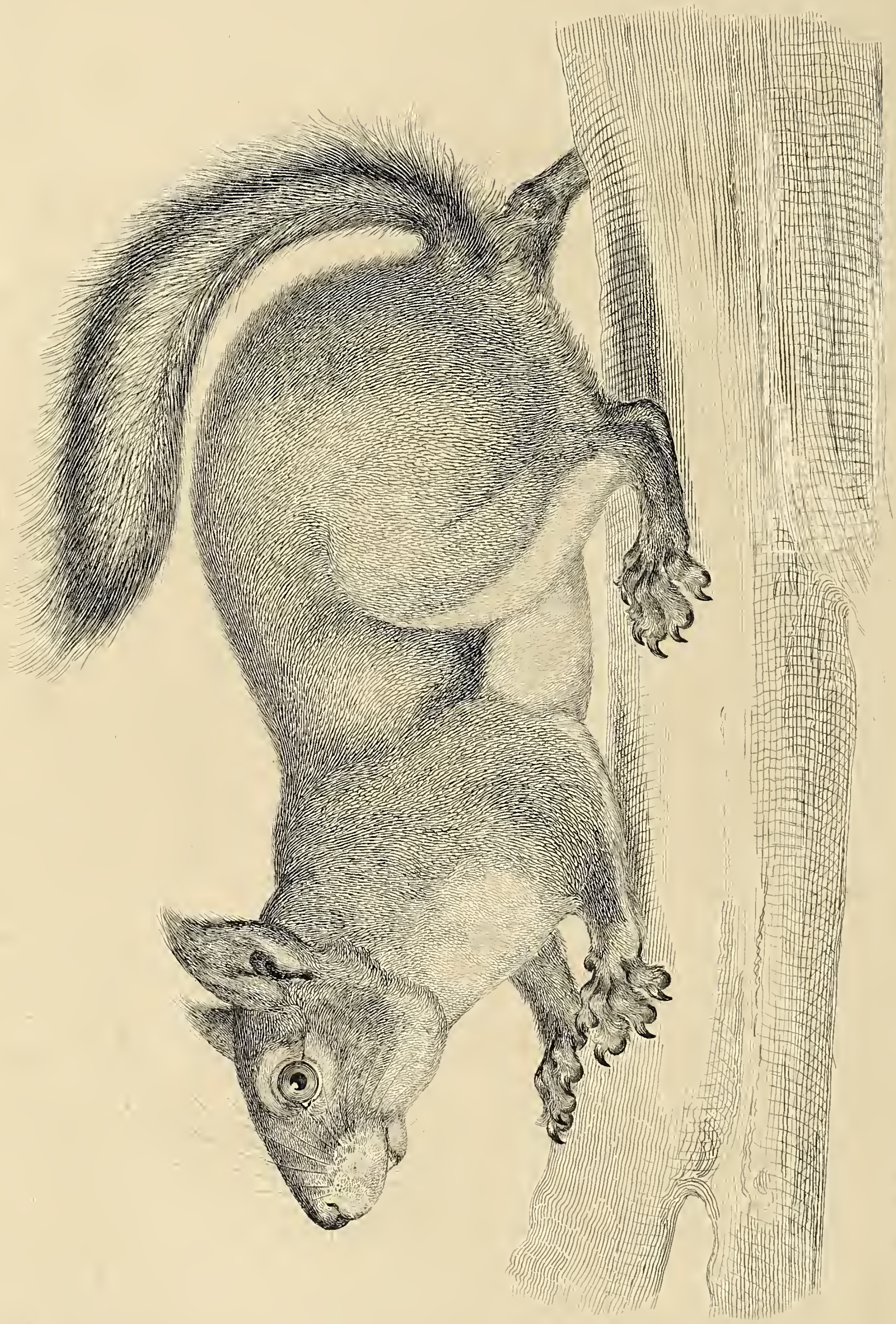
41st Parallel Mammals. Plate VI

520



Sciurus fremontii. Sawatch Pass

U.S.P.R.R.Ex. & Surveys — 47th Parallel. Mammals: —— Plate VII.

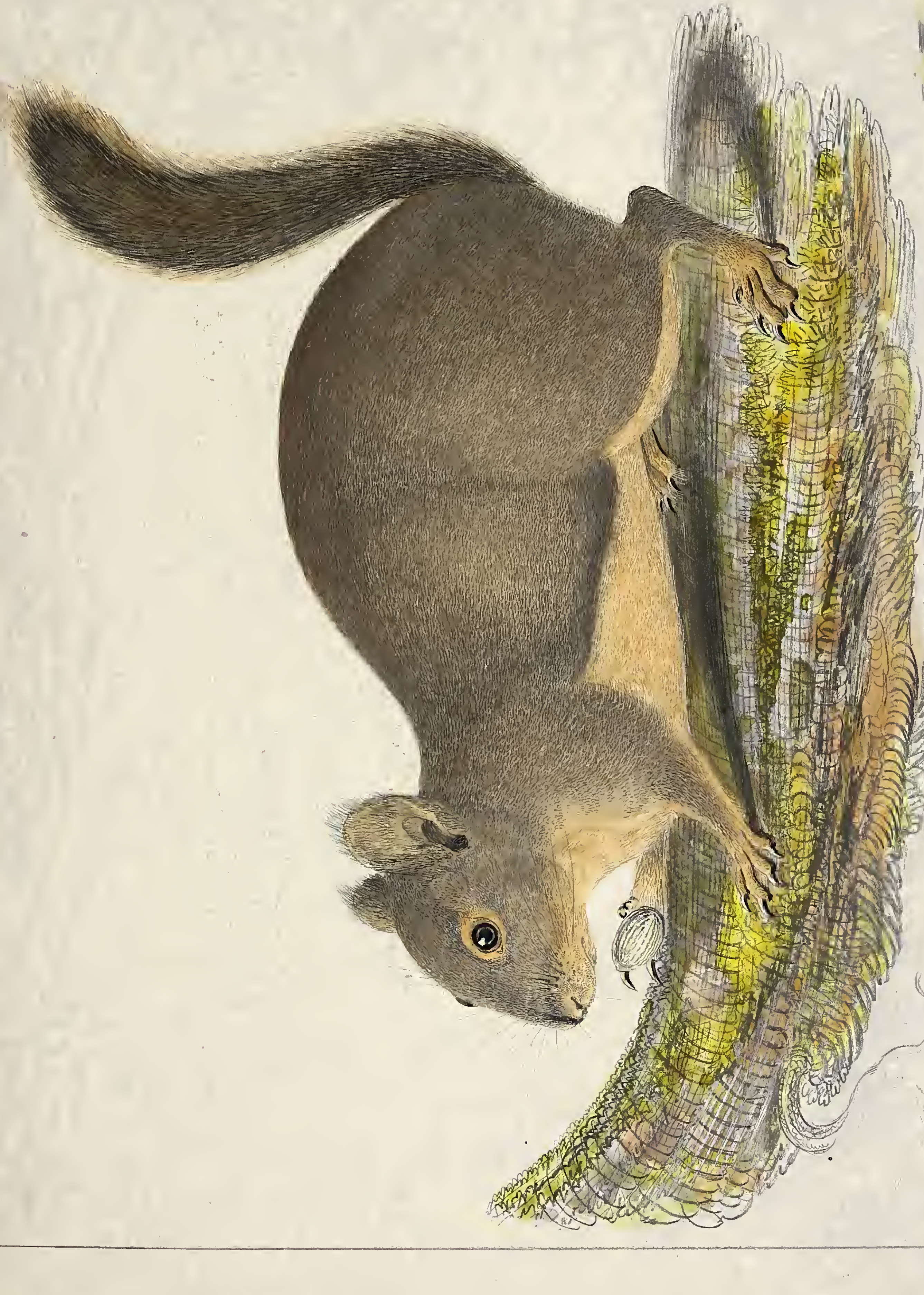


J.H.Richard del. R.Metzeroth sc.

47° Parallel

Mammals. Plate VII

272



Sciurus suckleyi. Bd. Steilacoom. 272

Richard a c Lebreton

Fig. 1.

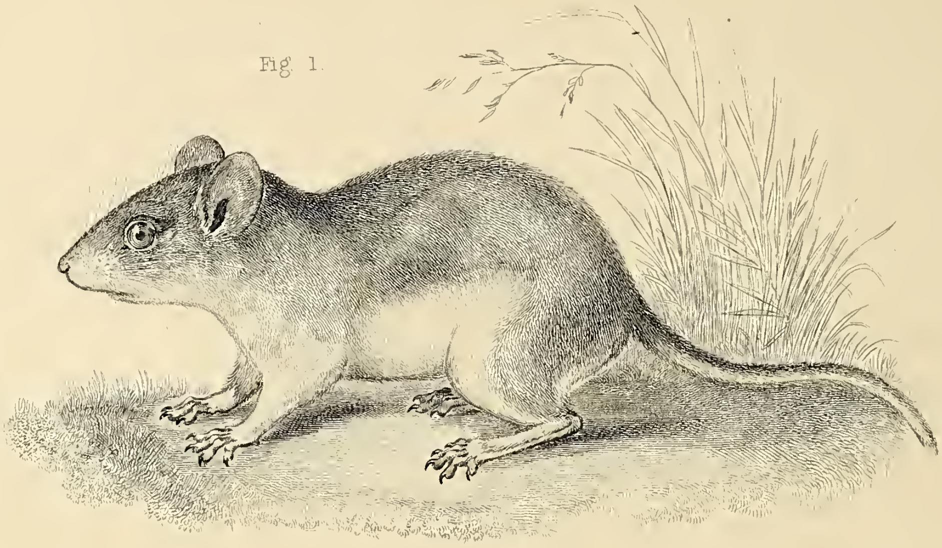


Fig. 2.

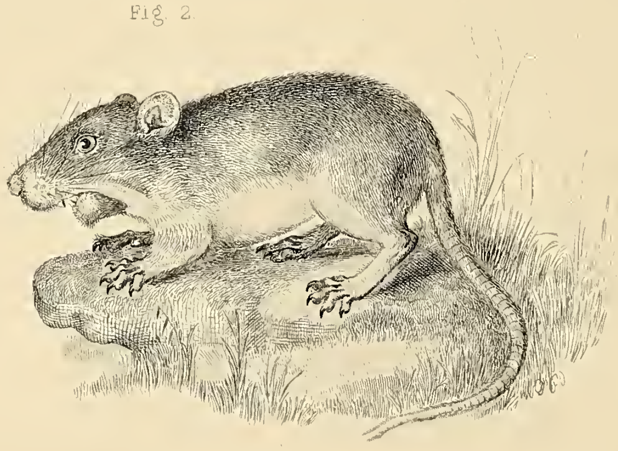
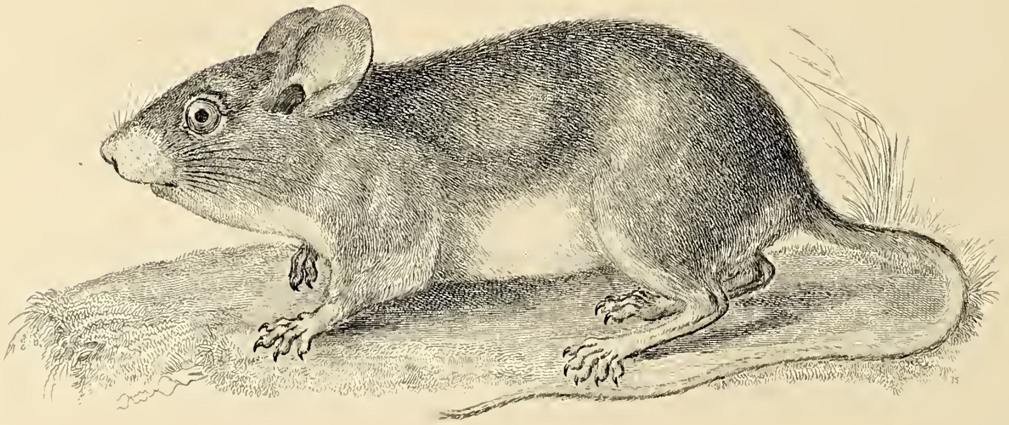


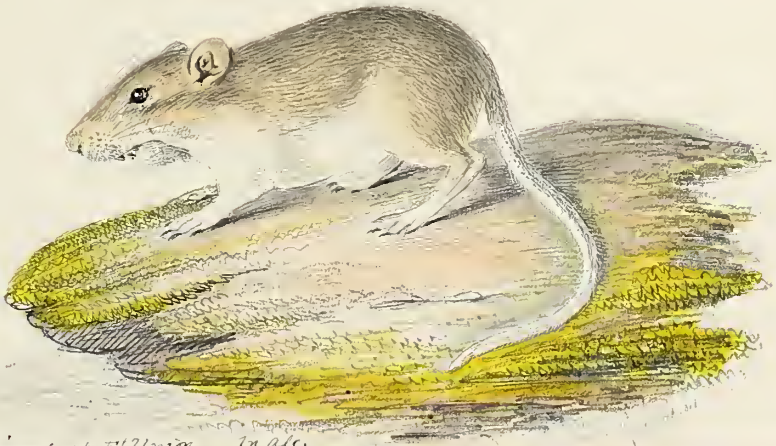
Fig. 3.



J. H. Richard del.

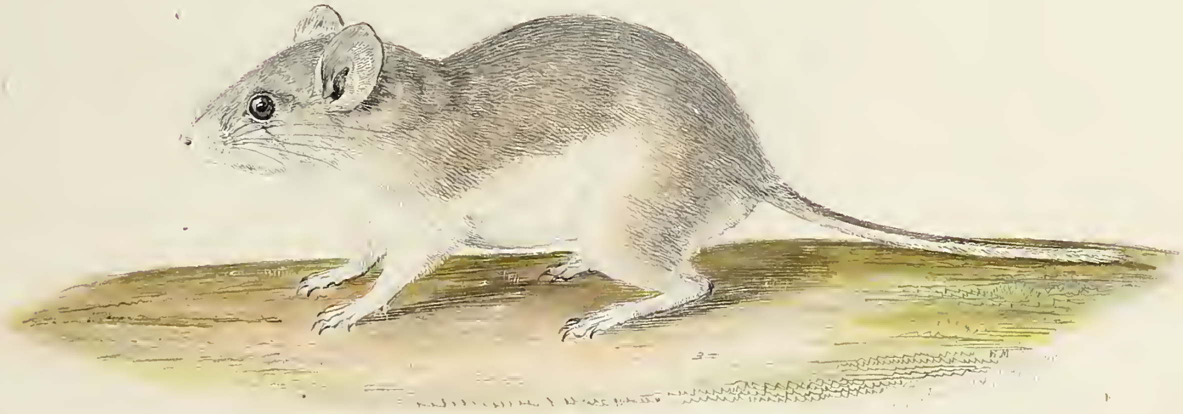
R. Metzeroth sc.

Mammalia Plat VIII

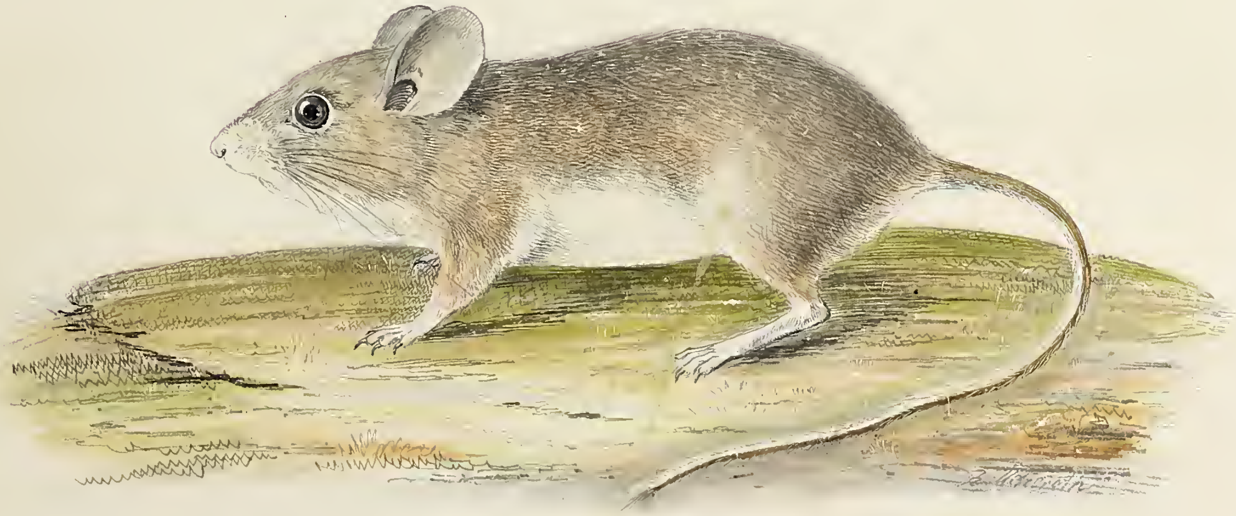


Perognatus . Missouri ab. Ft. Union. In alc. O. Suckley

Mammals. Plate VIIII



Hesperomys texanus, Woodh. ♂ Kennerly. Pecos & Red Riv. 448



Hesperomys boylii, Bd. Mid. Fork. Am. Riv. Cal. 356.

Fig. 1.

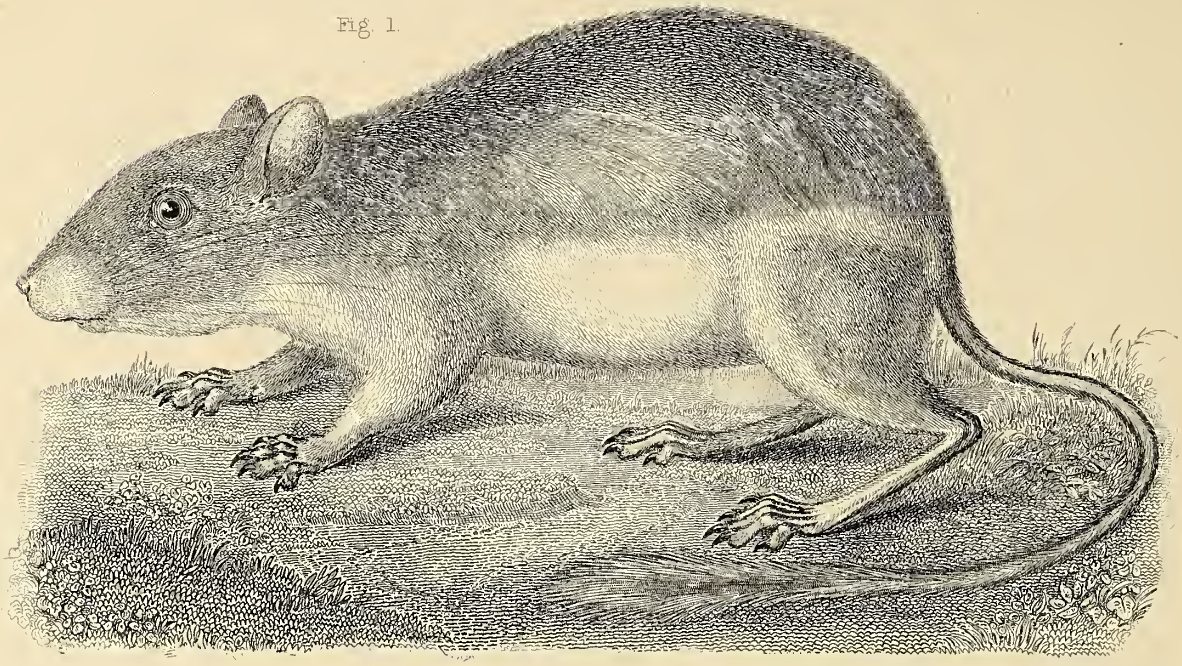
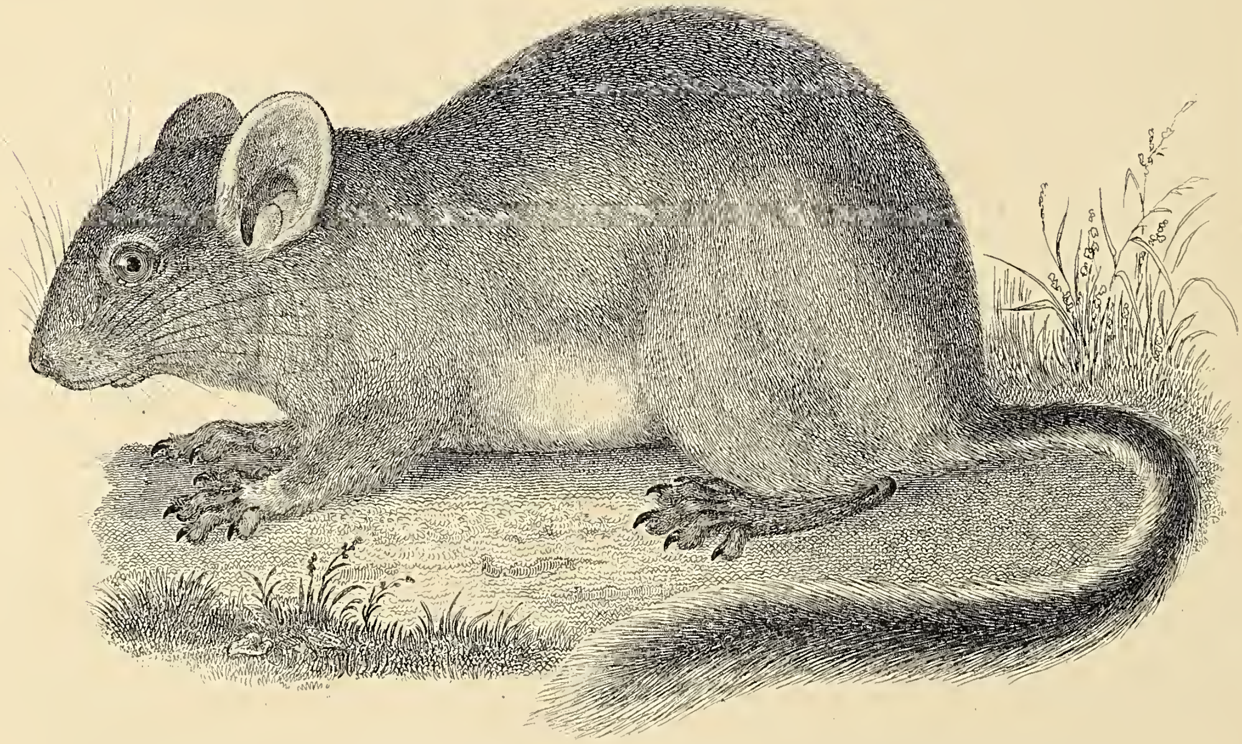


Fig. 2.

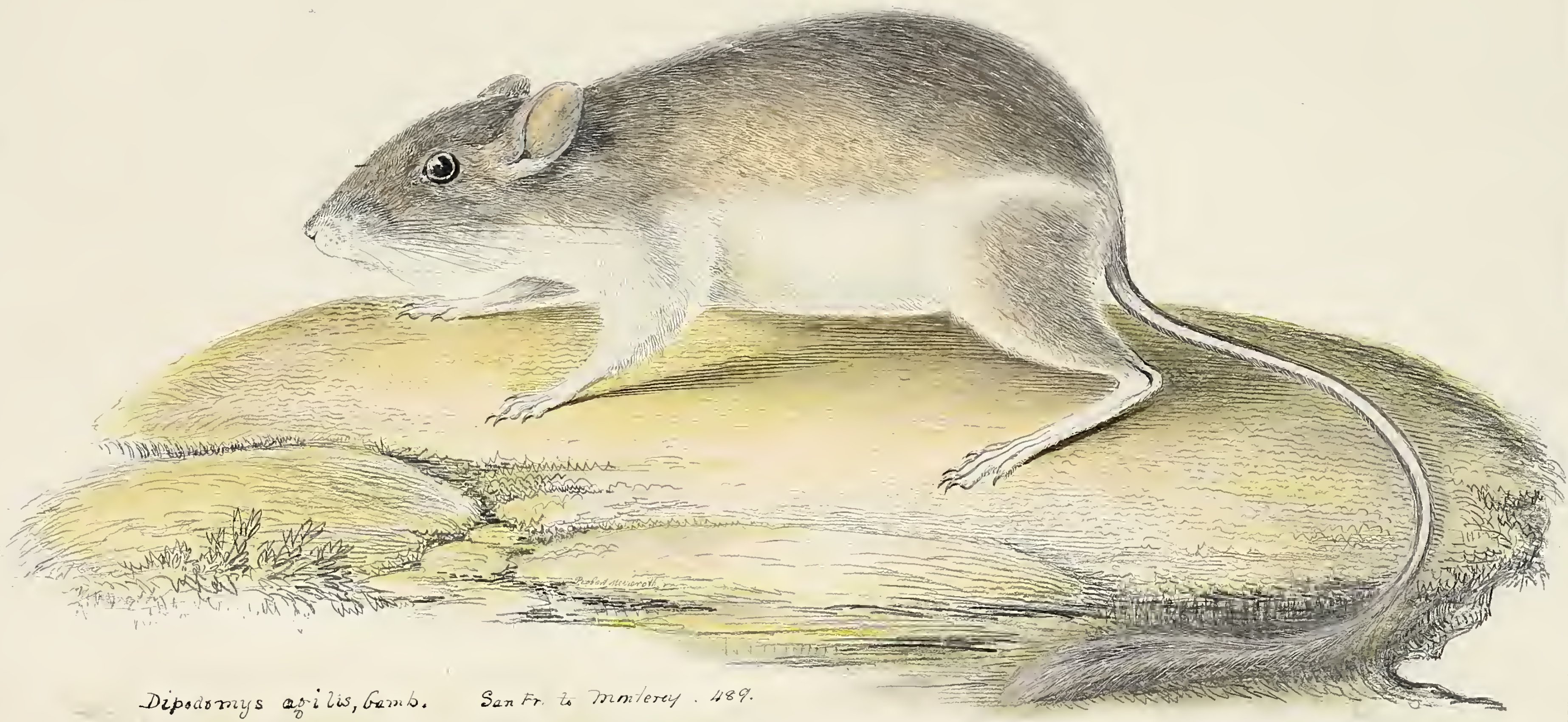


H. Richard del.

R. Metzeroth sc.

Mammal. Plate IX

47' Parallel
35'

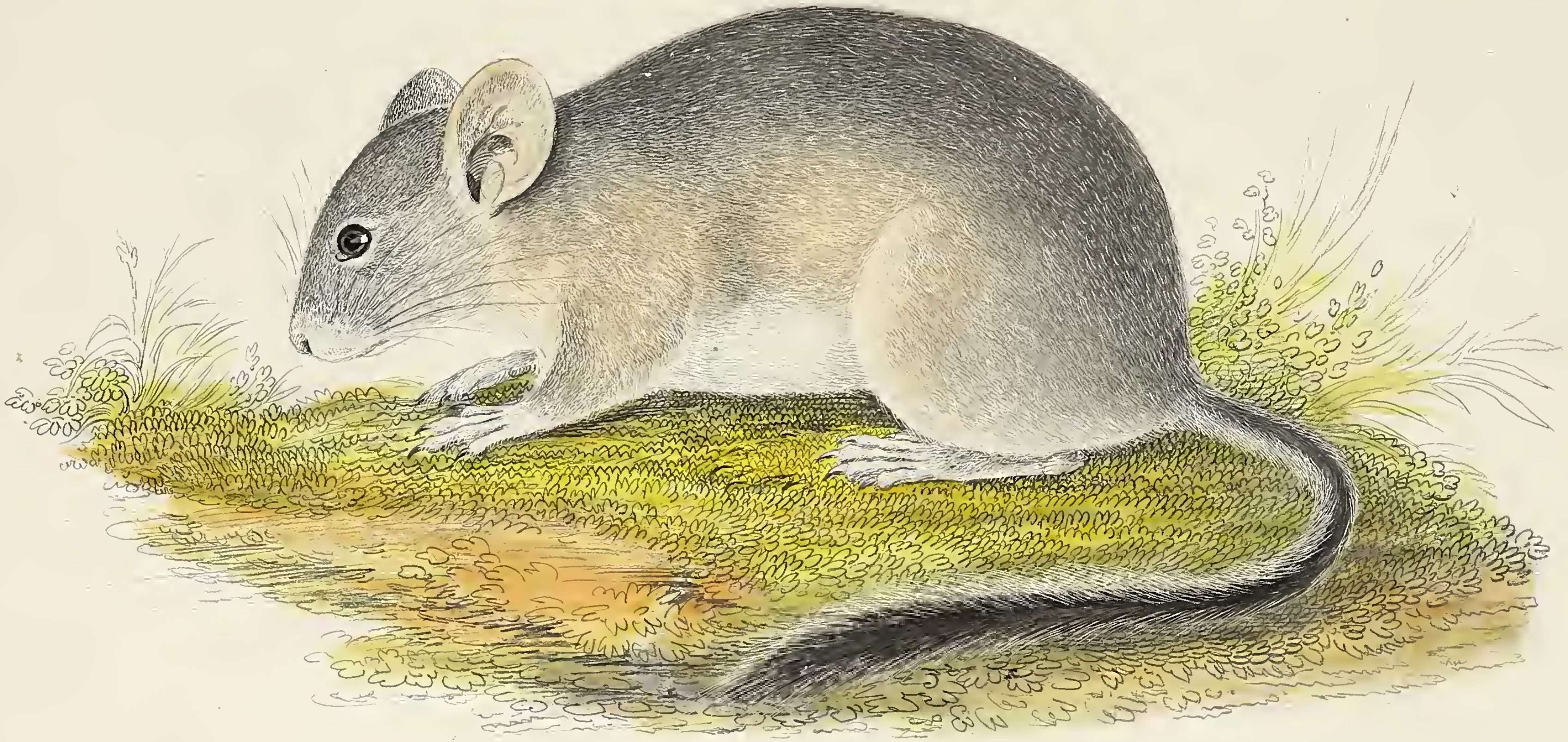


Dipodomys agilis, Gamb. San Fr. to Monterey. 489.

Trowbridge.

H. Richard and R. M. Metzeroth

Mammals · Plate X



Neotoma occidentalis, Cooper. — Shoalwater Bay, W.T. 442

[illegible]

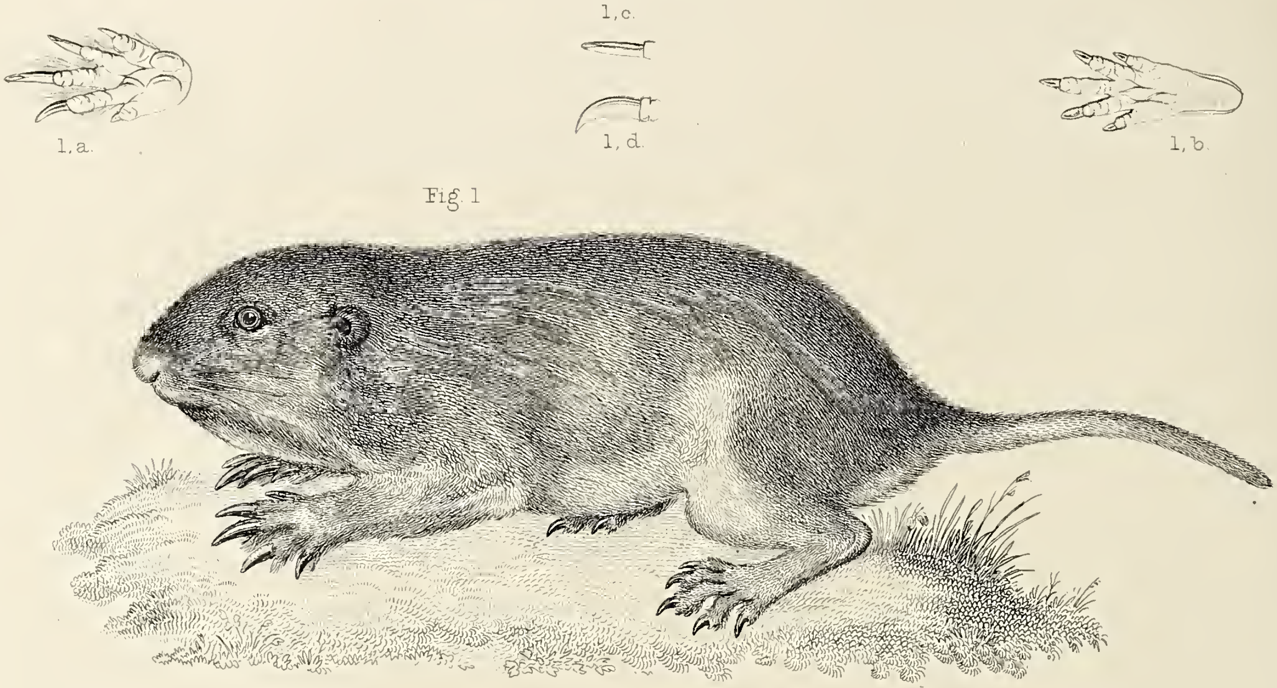


Fig. 1

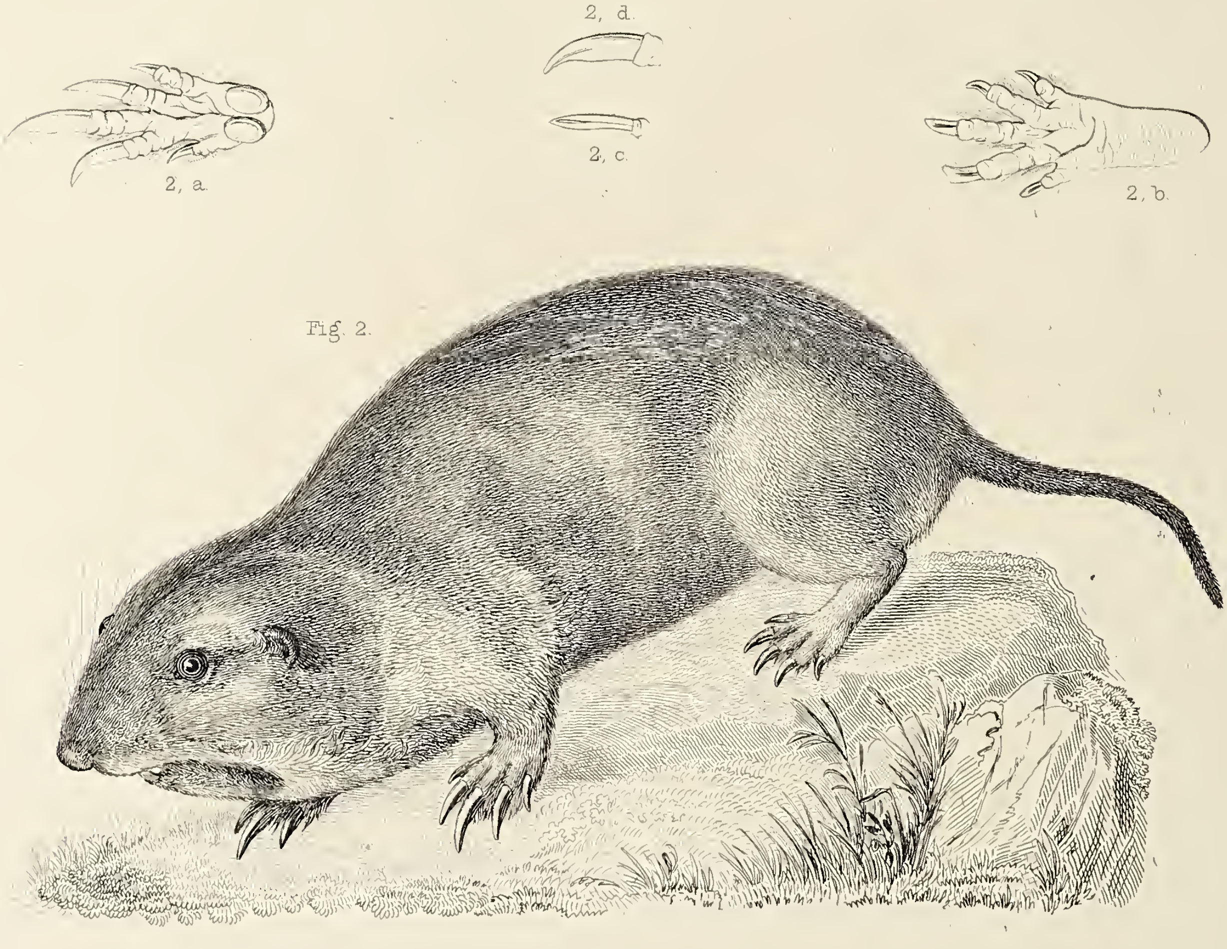


Fig. 2.

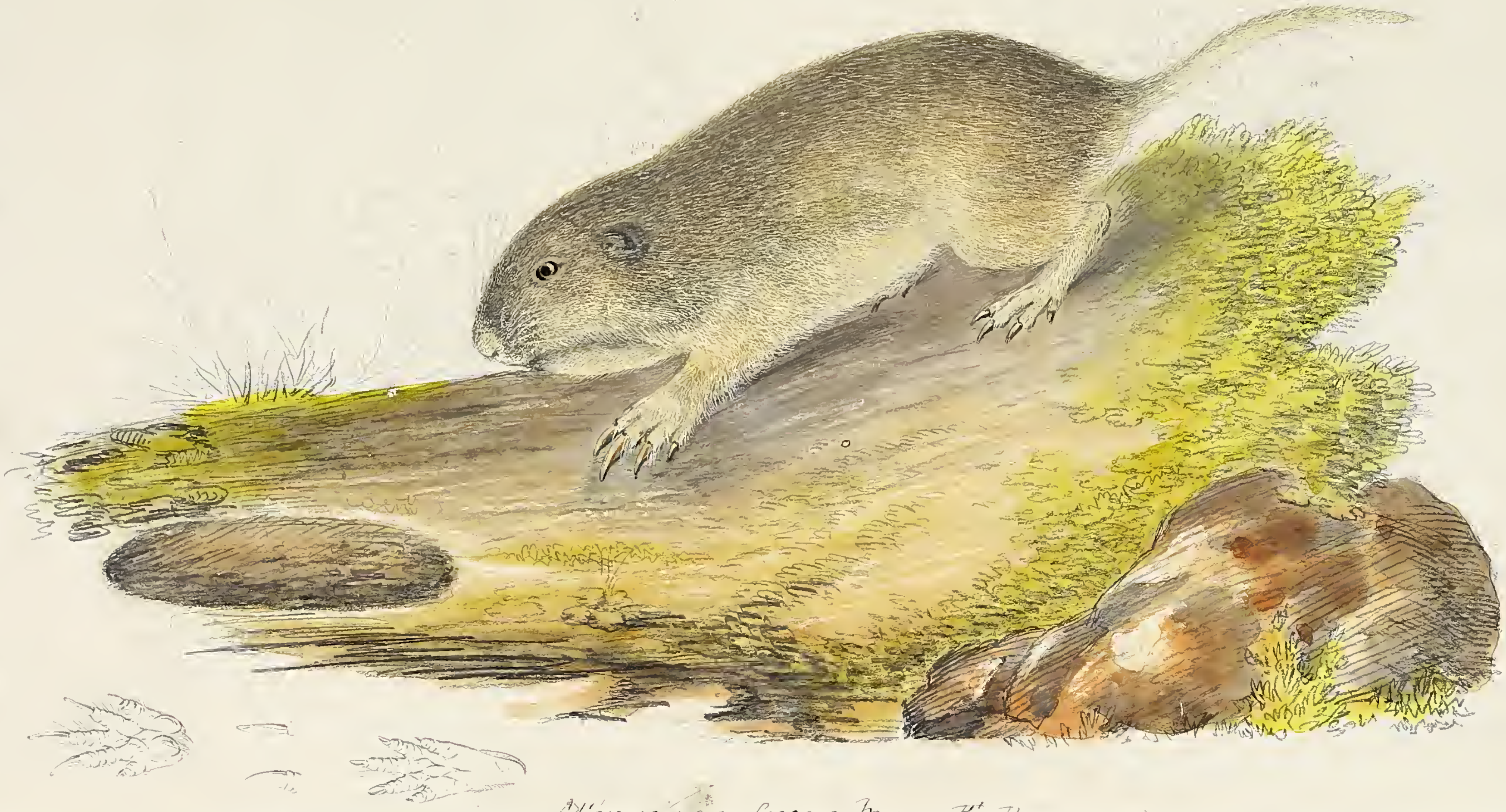
J.H.Richard del.
R.Metzeroth sc.

Engraved.

Mammal X

610

47 Parallel



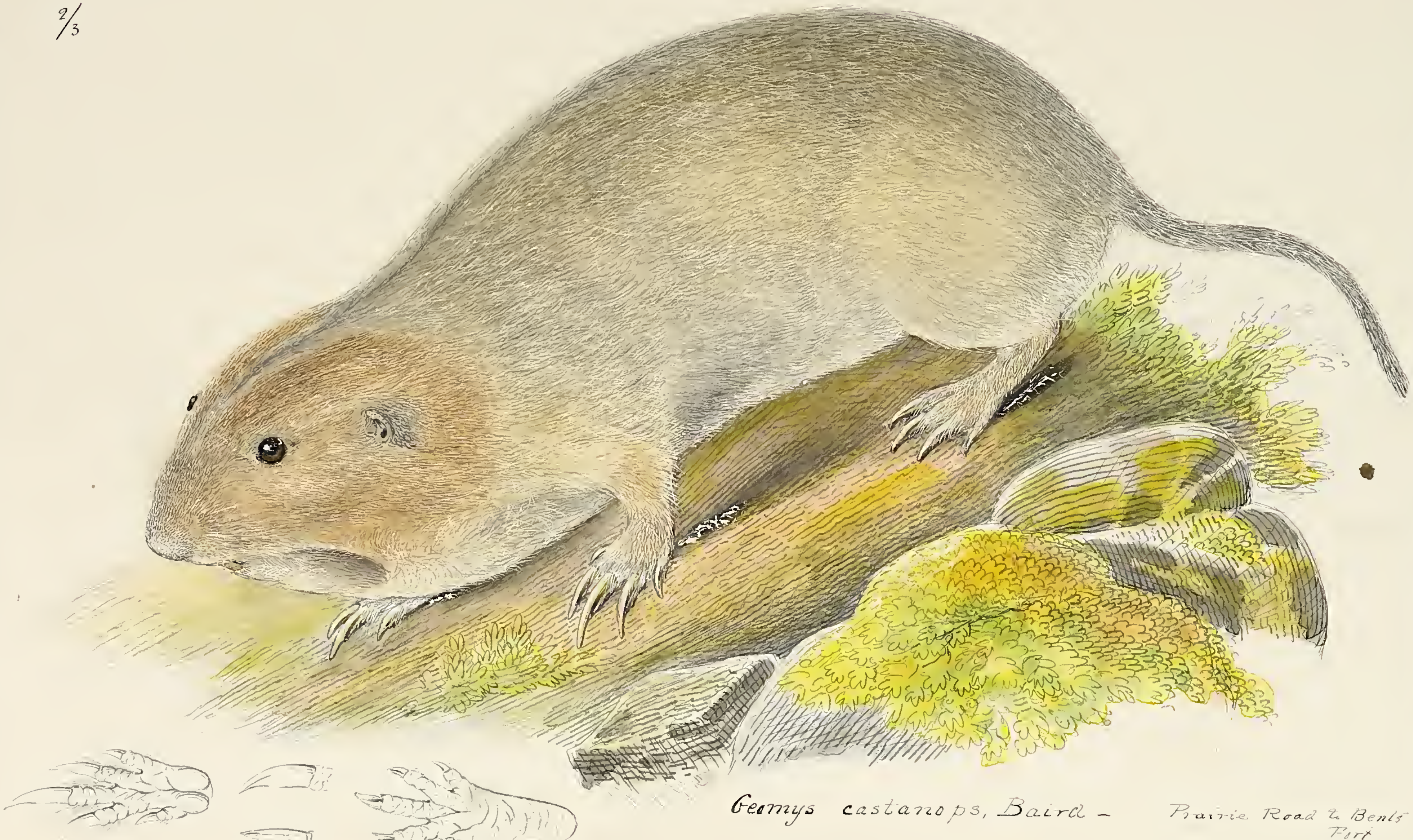
Thomomys rufescens. Max. F^t Pierre. 610.

Engraved

Mammals X

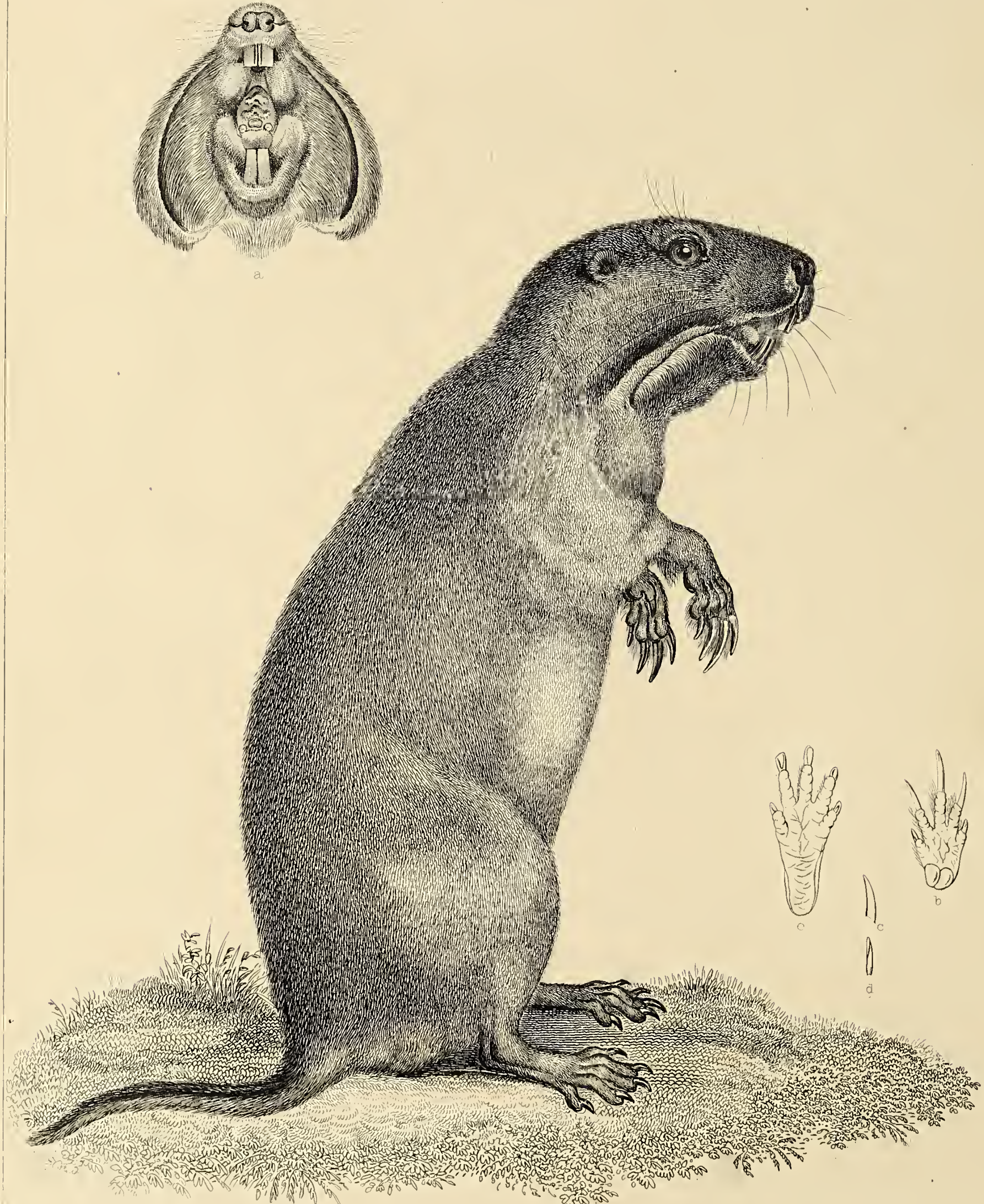
41st Parallel

2/3



Geomys castanops, Baird – Prairie Road & Bents Fort

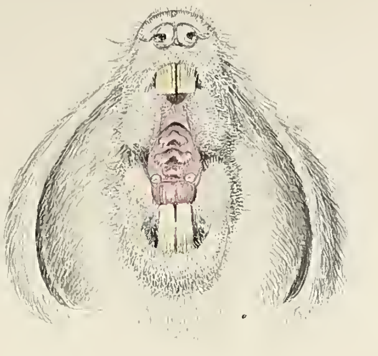
[illegible]



H. Richard del. R. Metzeroth sc.

XI

Mammals. Pl. XI



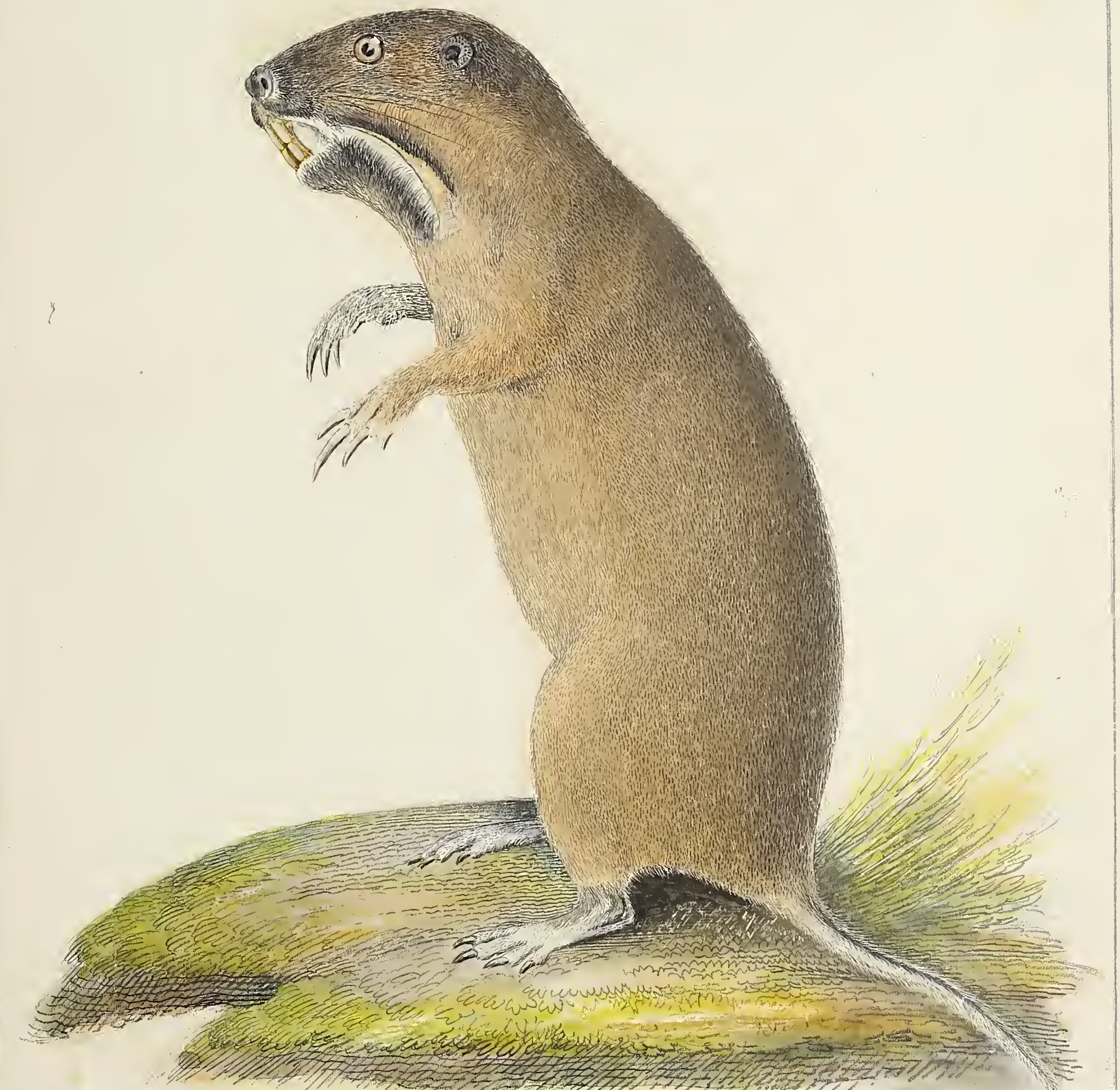
Thomomys bottae, Bd. – Fort Point, Cal.

J H Richard.

Alc. W.P.T.

Thomomys bottae Fort Point. Cal

604.



Thomomys bottae, Bd. San Francisco. 604

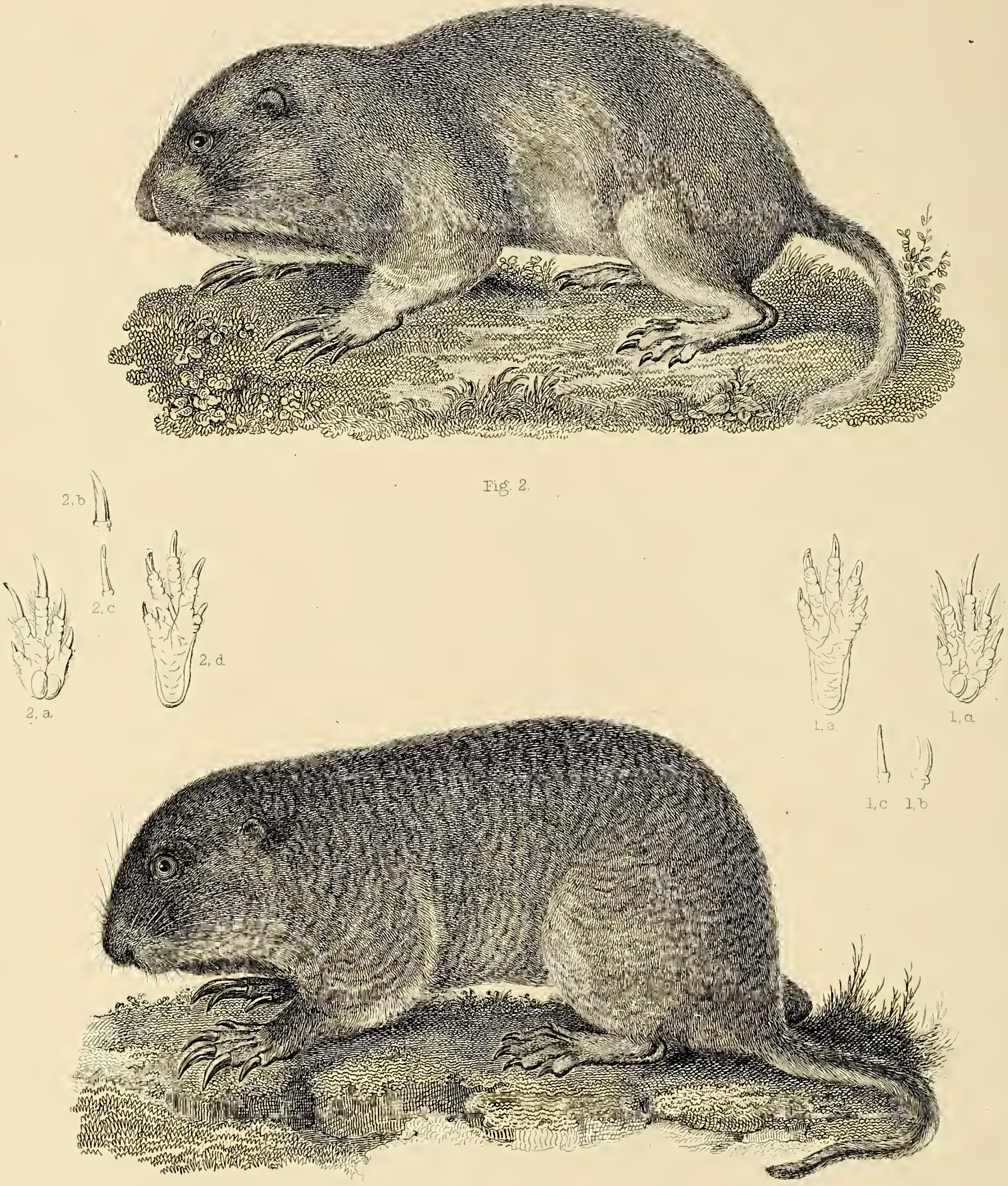
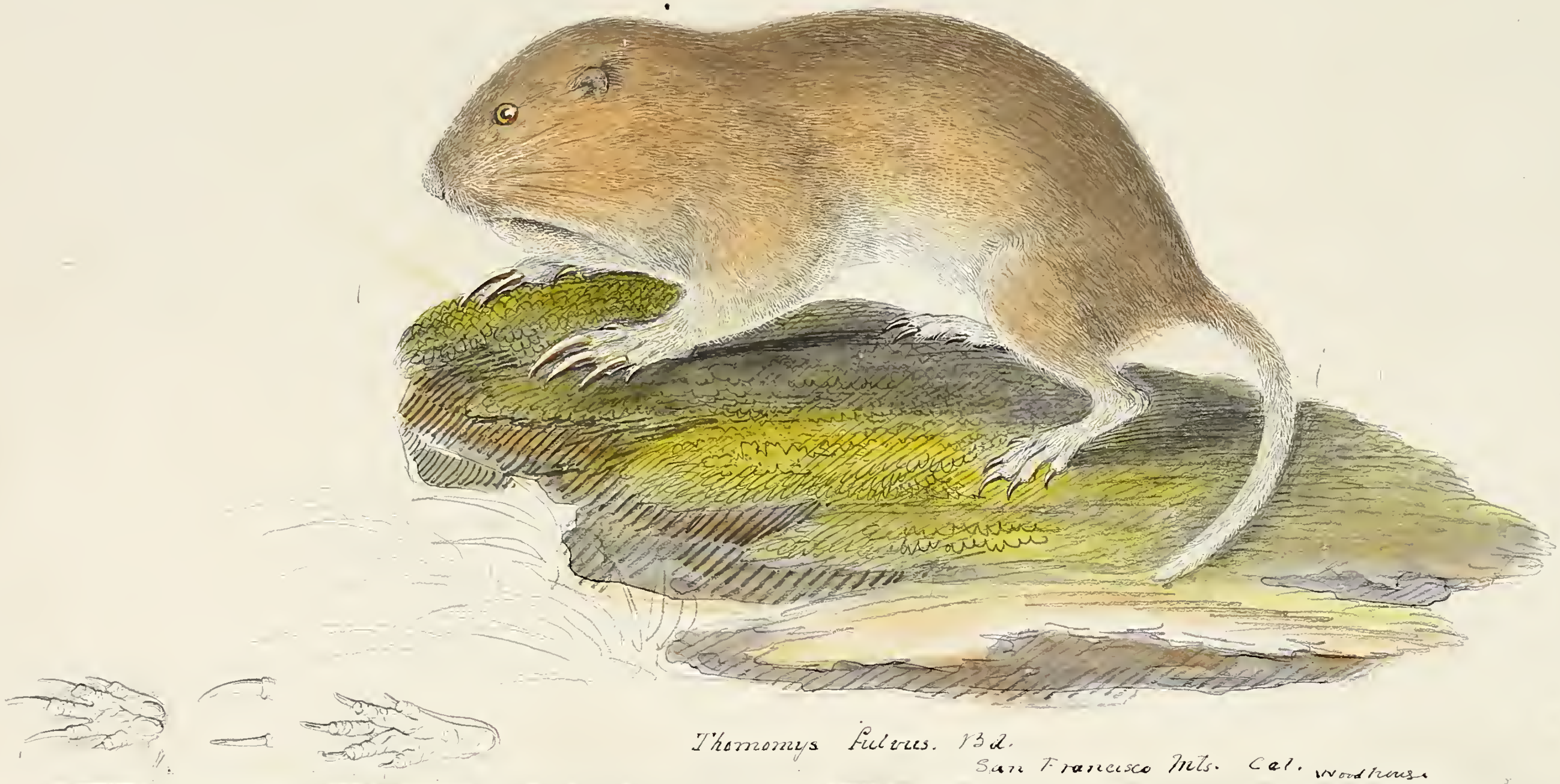


Fig. 2.

Fig. 1.

J. H. Richard del. R. Metzeroth sc

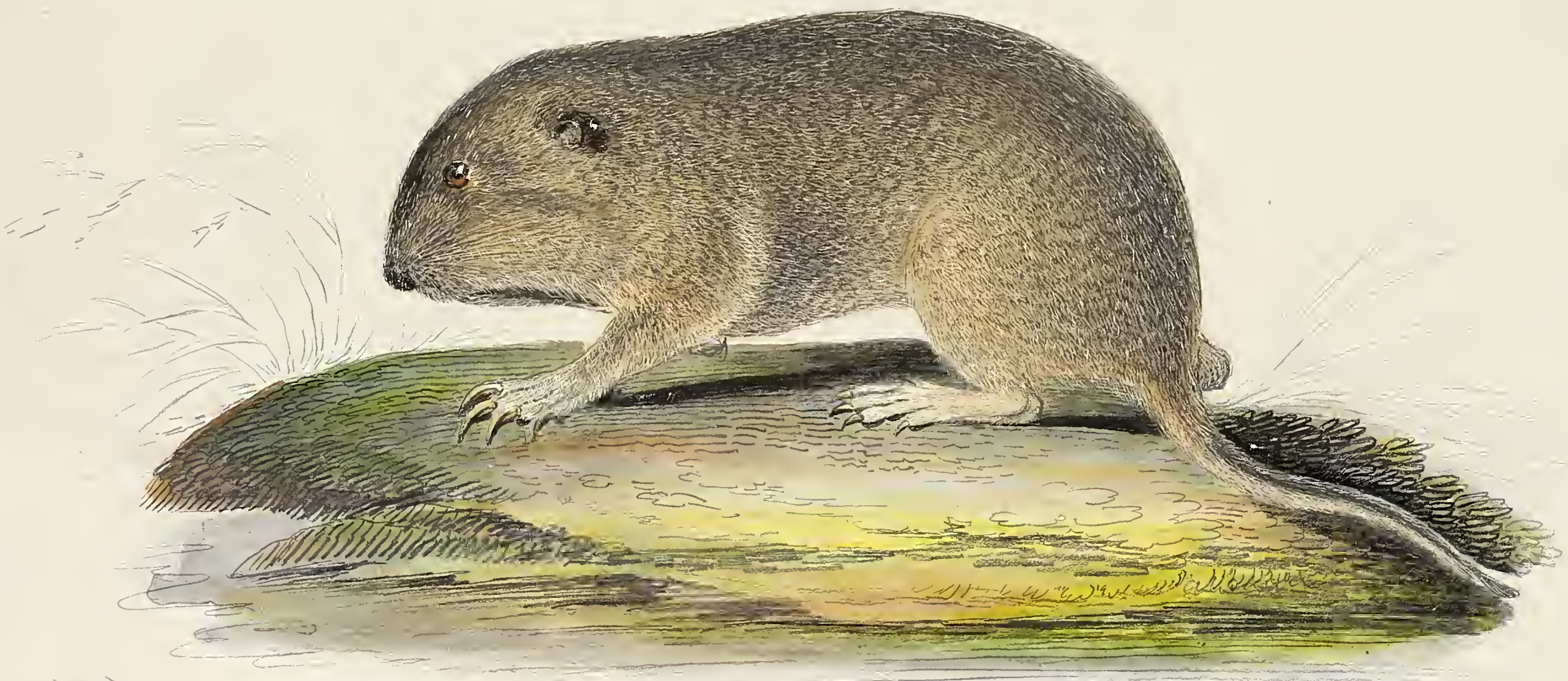
Mammals. Plate XII



Thomomys fulvus. Bd.
San Francisco Mts. Cal. Woodhouse

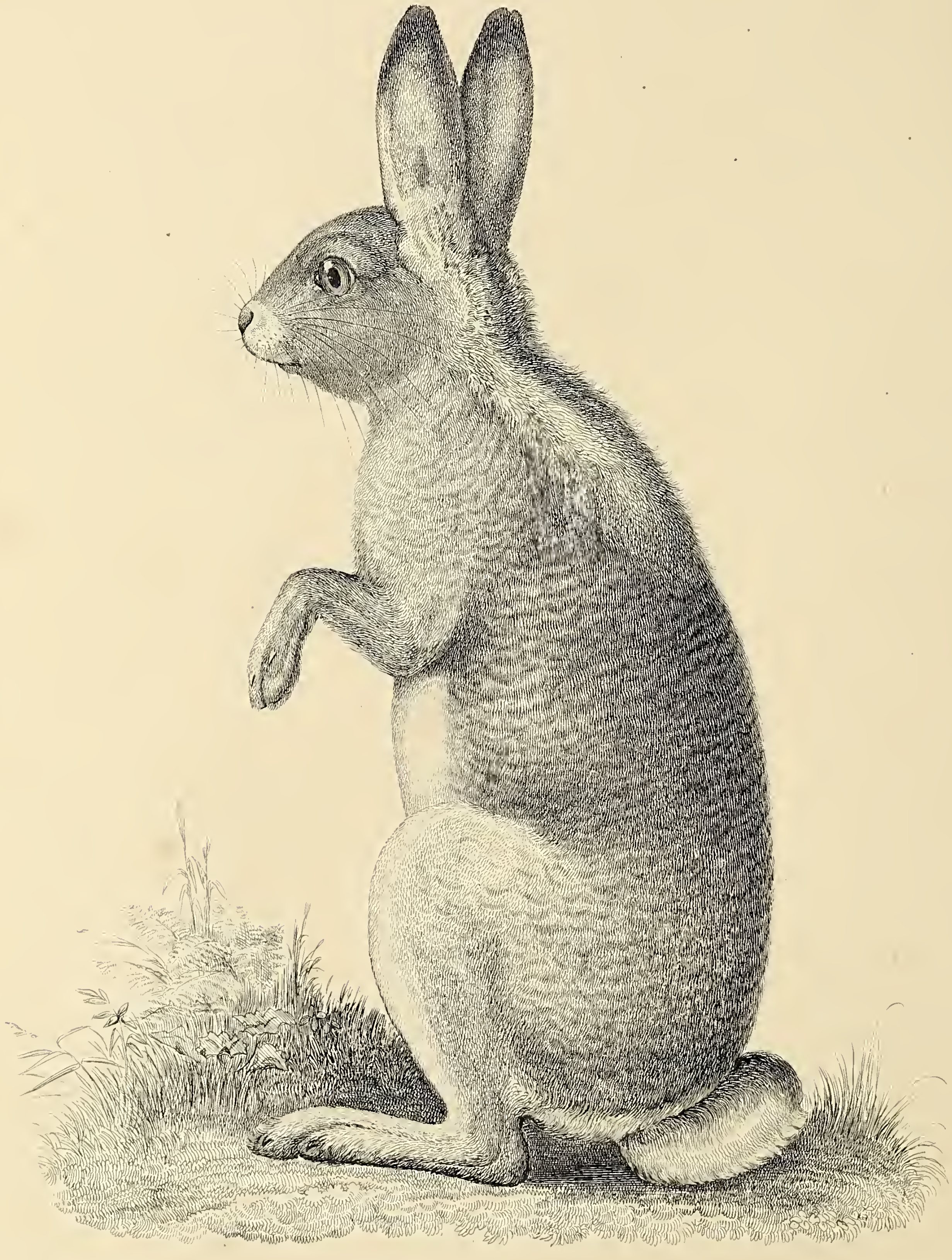
Mammal. Plate XII

513



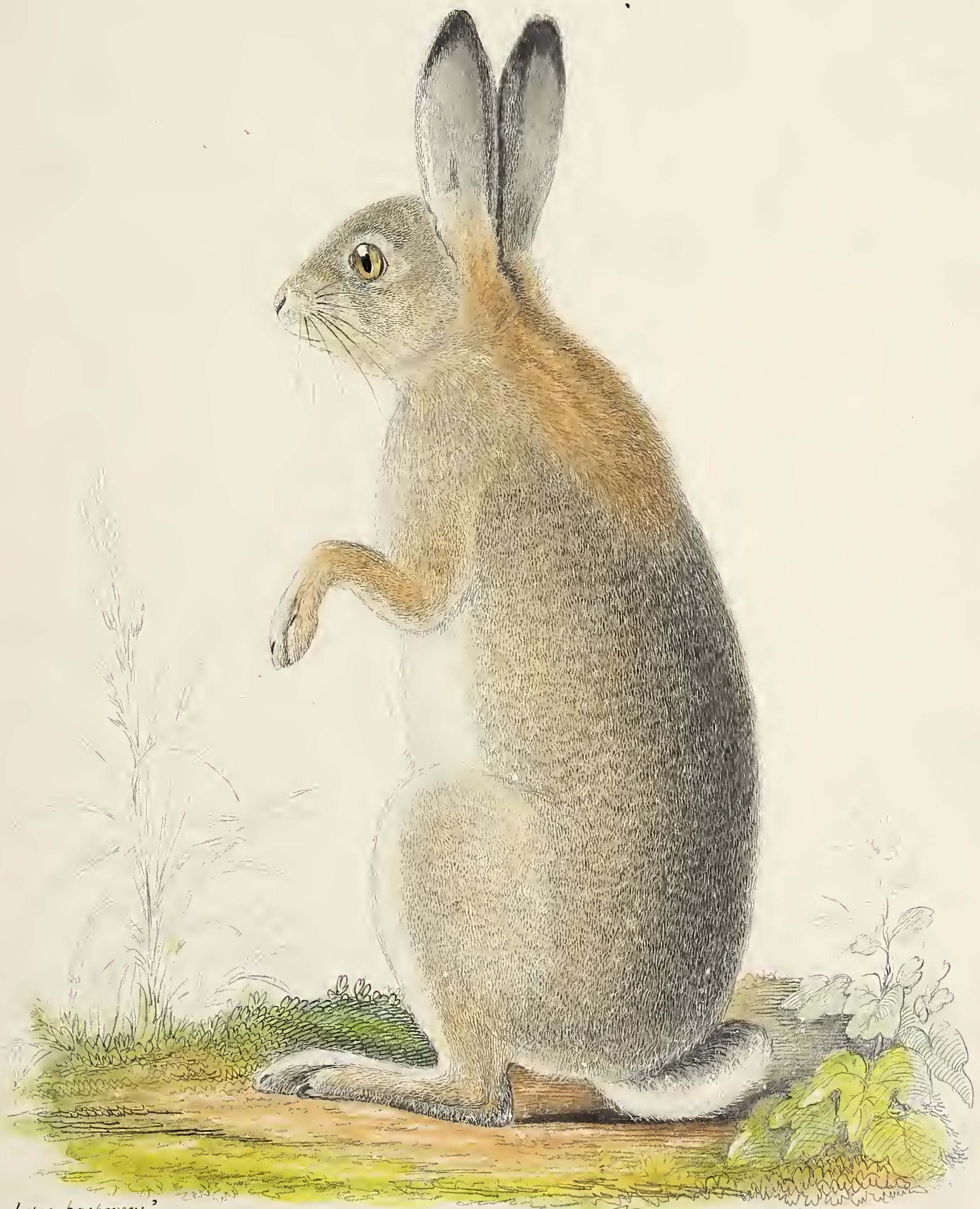
Thomomys laticeps, Bd. Humboldt, Cal. No 573.
Trowbridge.

~~Mammal Plate XII~~



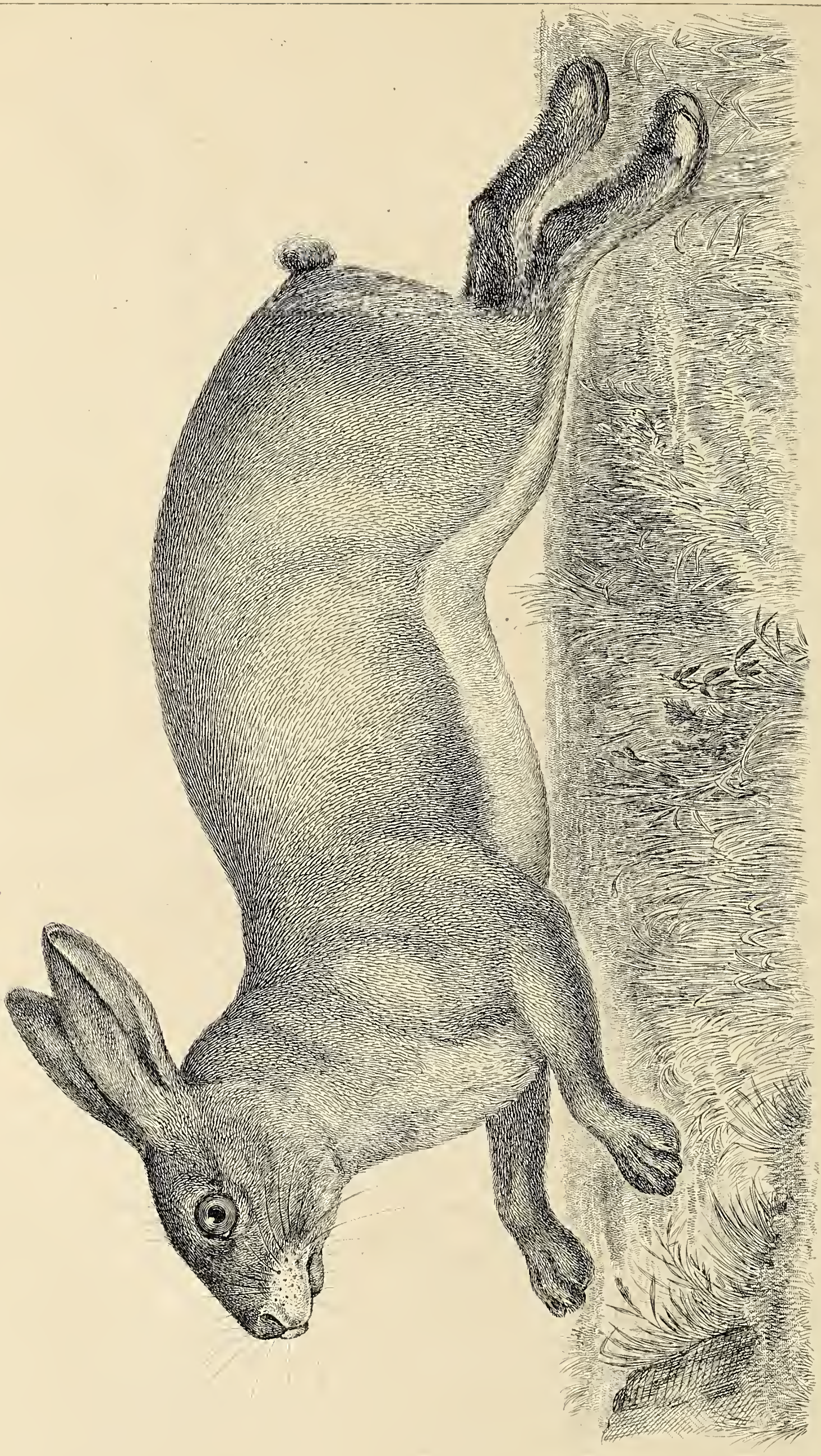
J.H.Richard del. R. Metzeroth sc.

Mammals. Plate XIII



Lepus bachmani? monterey? Cal.

U.S.P.R.R.Ex. & Surveys: — 35th Parallel. Mammals: — Plate XIV.

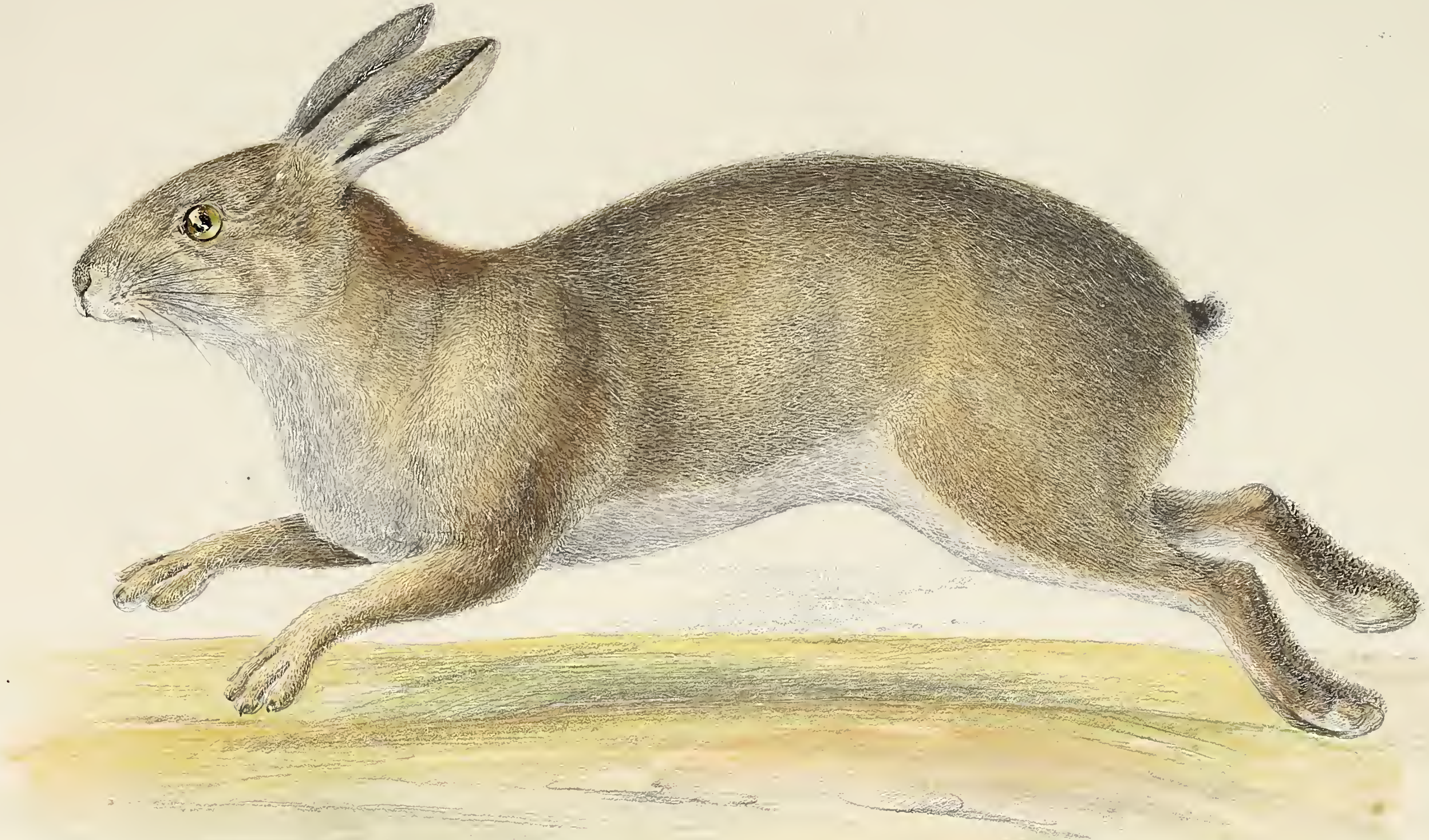


J.H.Richard del. R. Metzeroth sc.

35' Parallel
~~Cal. Oregon.~~

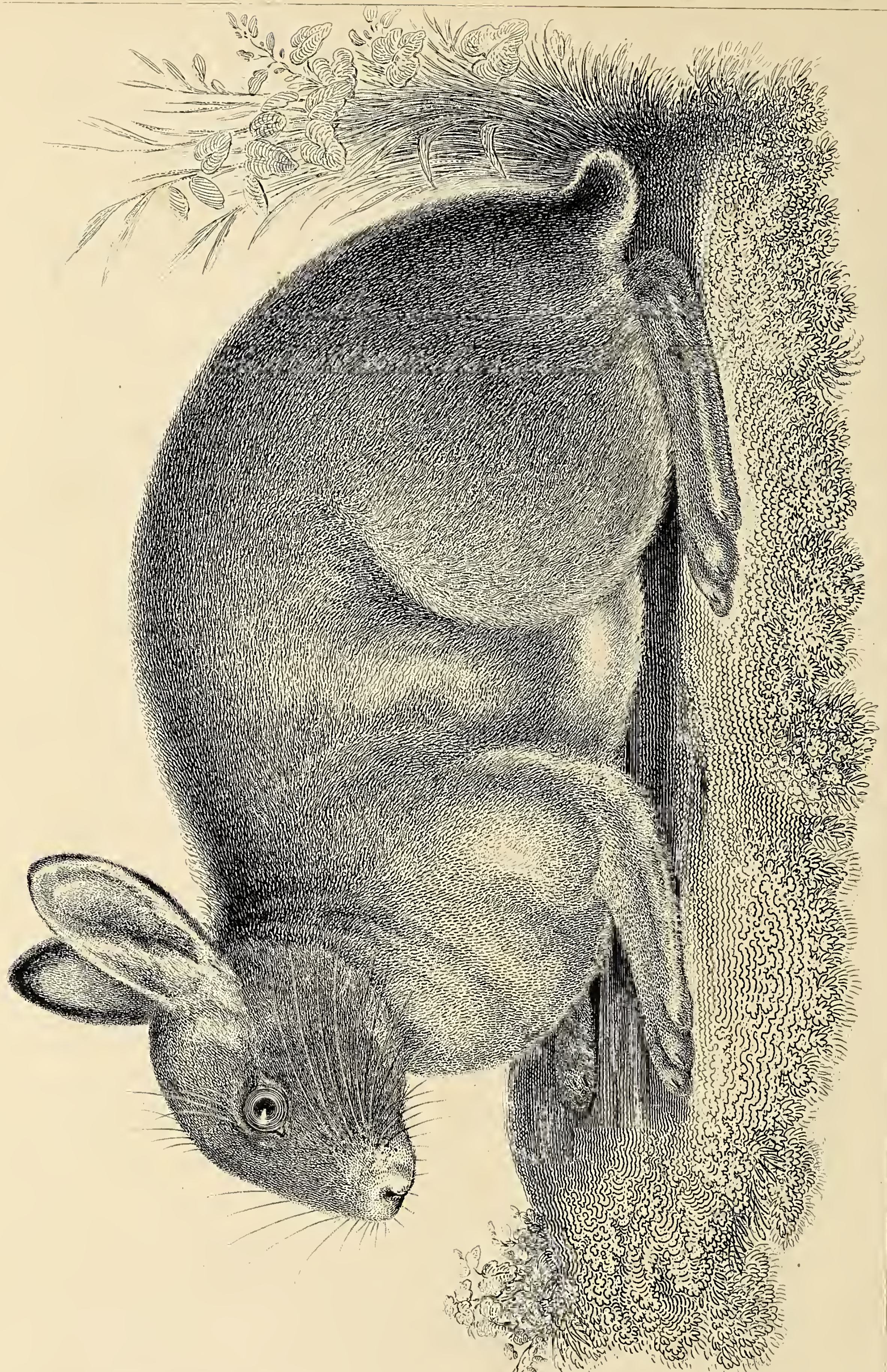
Mammals Plate XIV

310



310 Lepus Trowbridgii. Bd. California.

Richard [illegible]

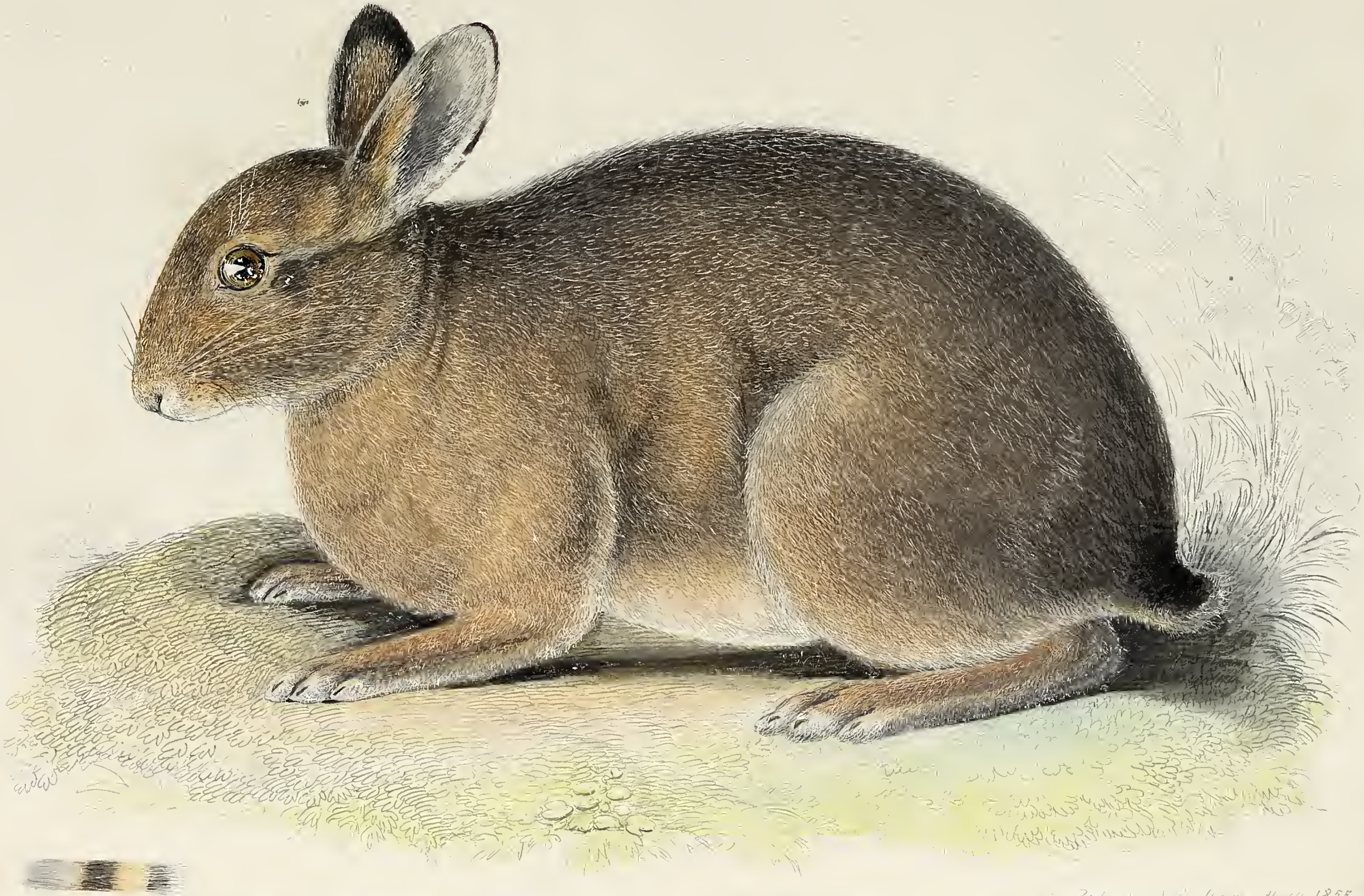


J.H.Richard del.

R.Metzeroth sc.

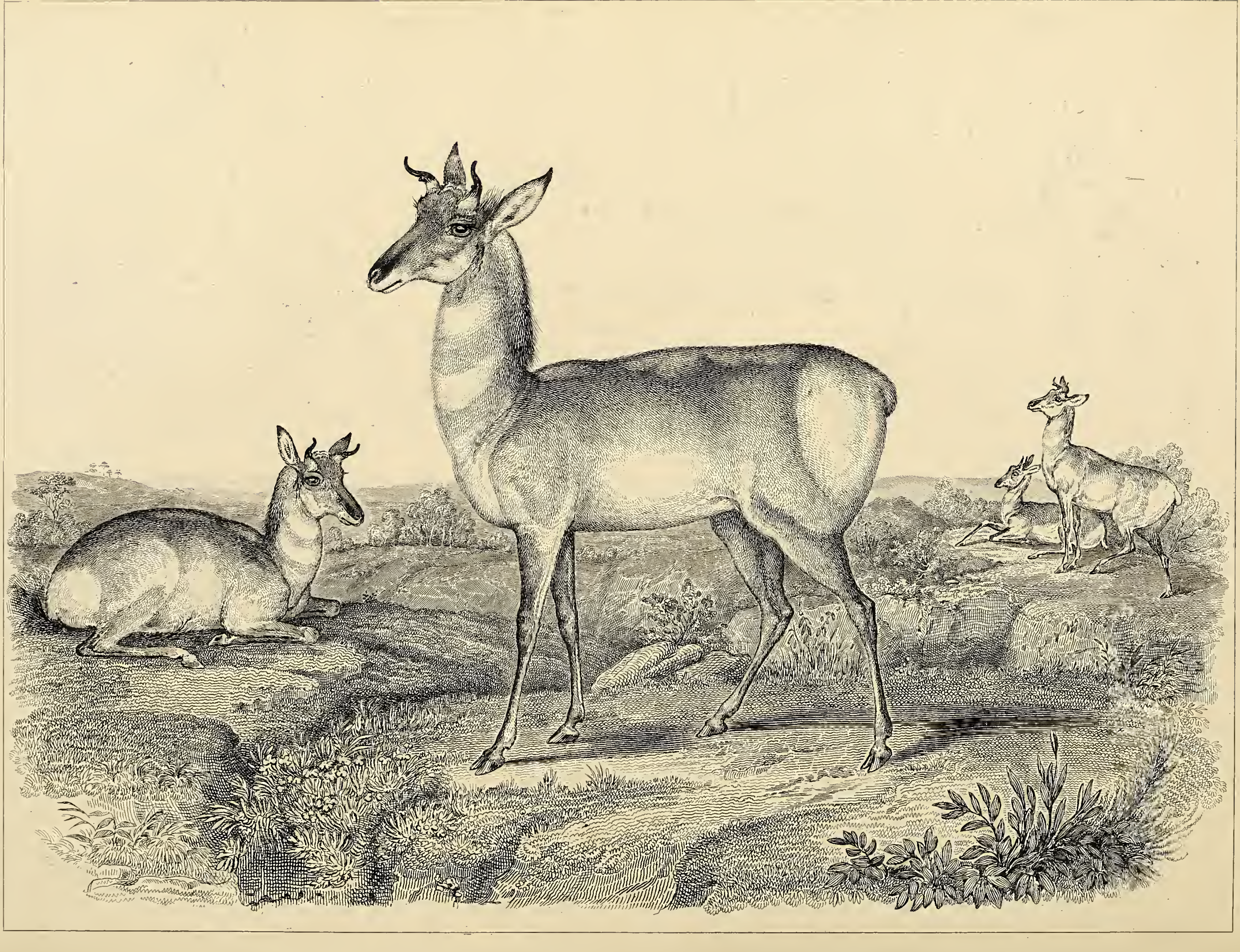
Mammals Plate XV.

XV



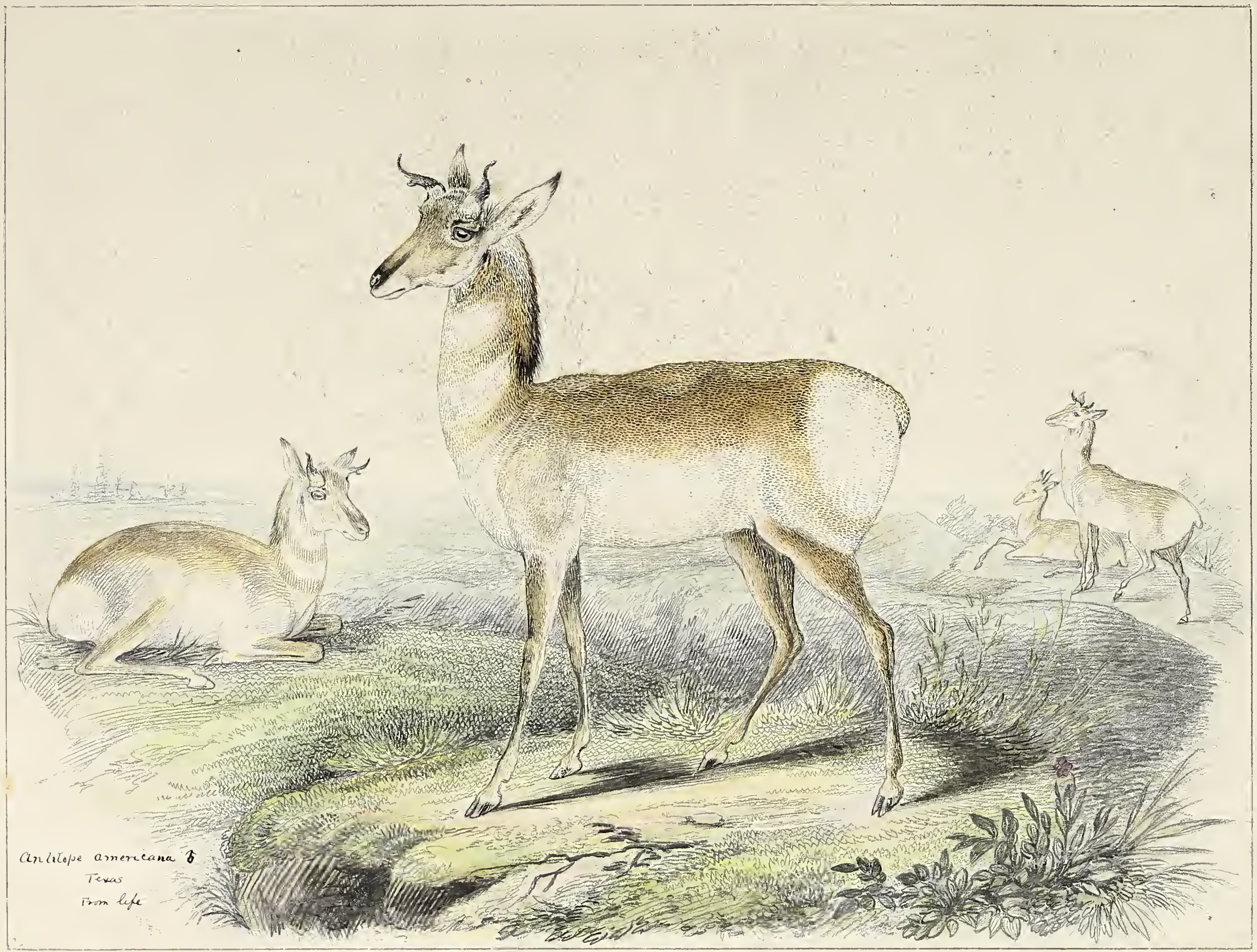
J. Richard and L. Hezroth fa. 1855.

U.S.P.R.R.Ex. & Surveys. 35th Parallel   Mammals —— Plate XVI.



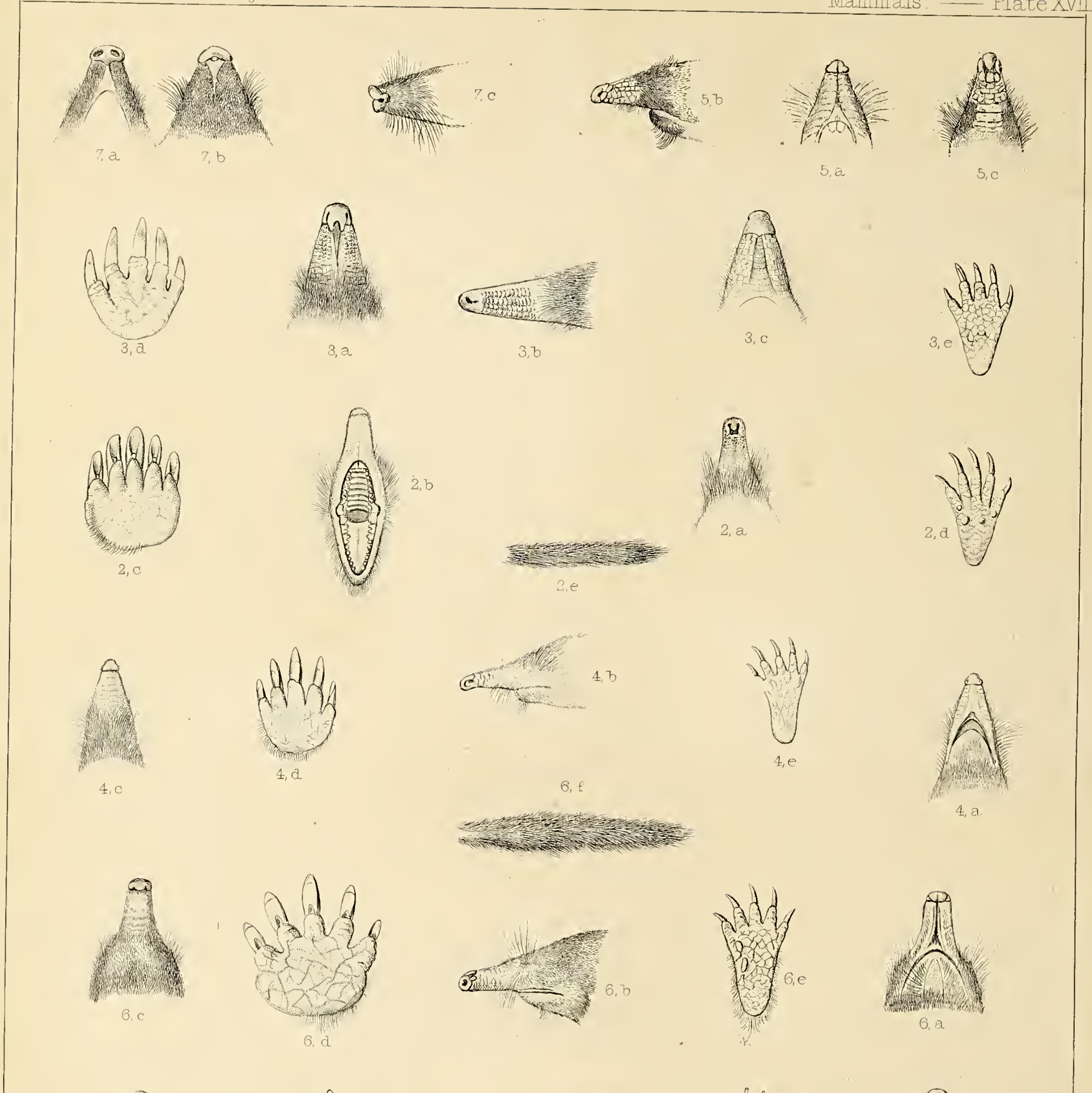
Drawn from Life and   eng^d by R.Metzeroth.

XVI



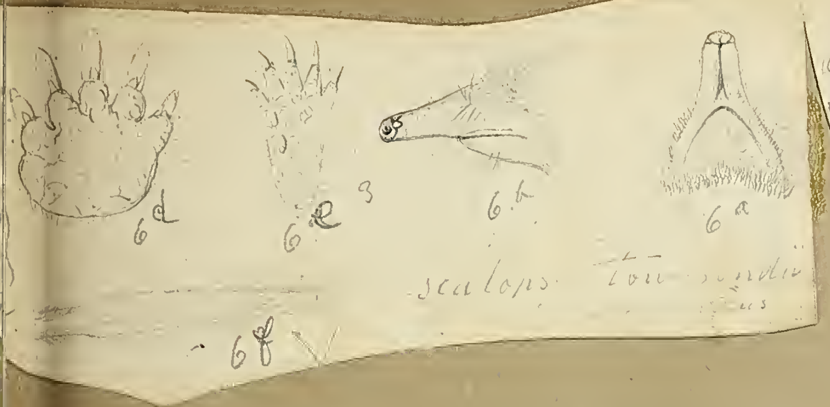
Antilope americana ♂
Texas
From life

Robert [illegible] Del. 1855

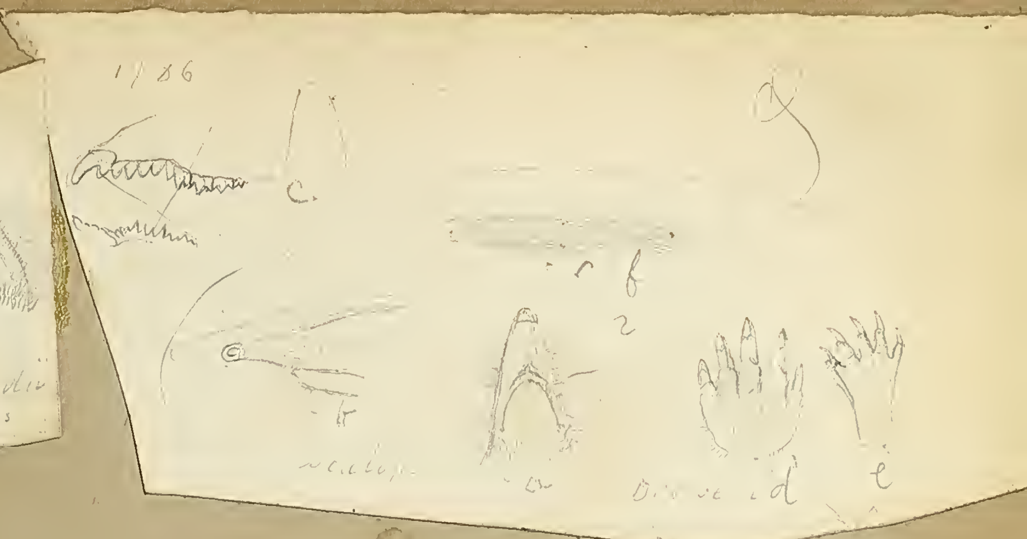


J.H.Richard del.

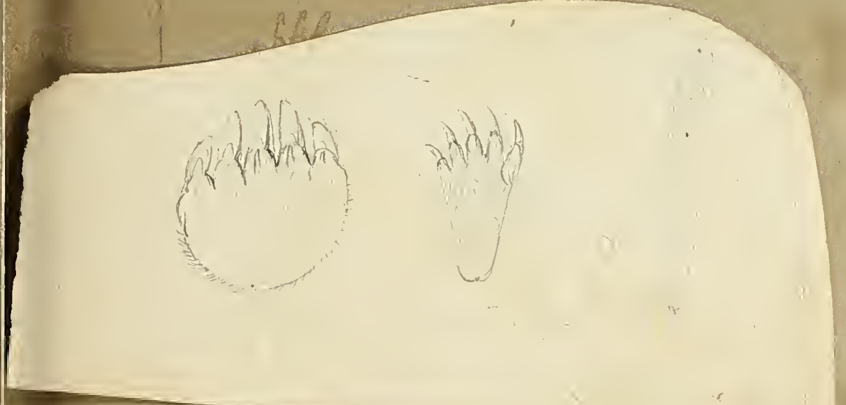
R. Metzeroth sc.

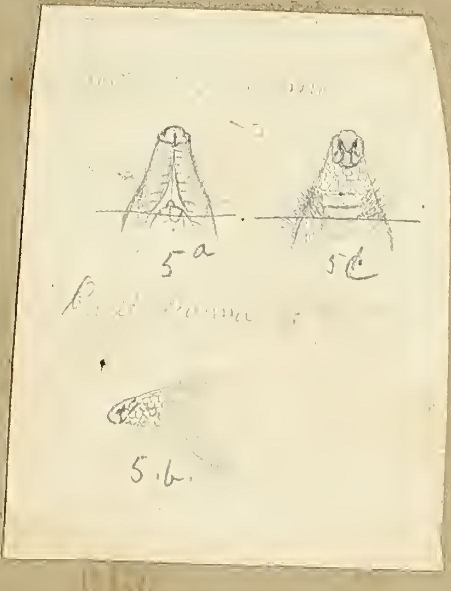


scalops townsendii



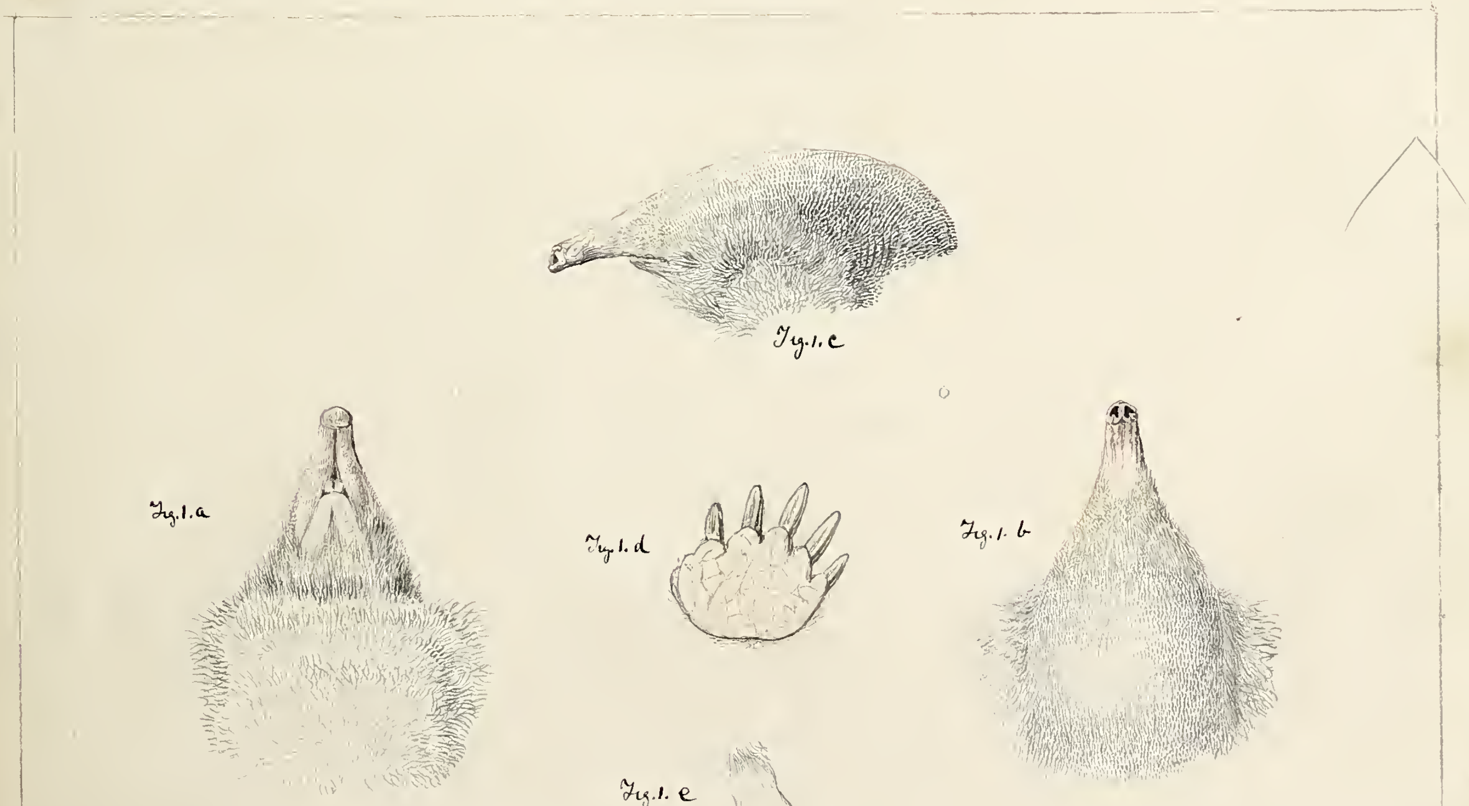
scalops [illegible]





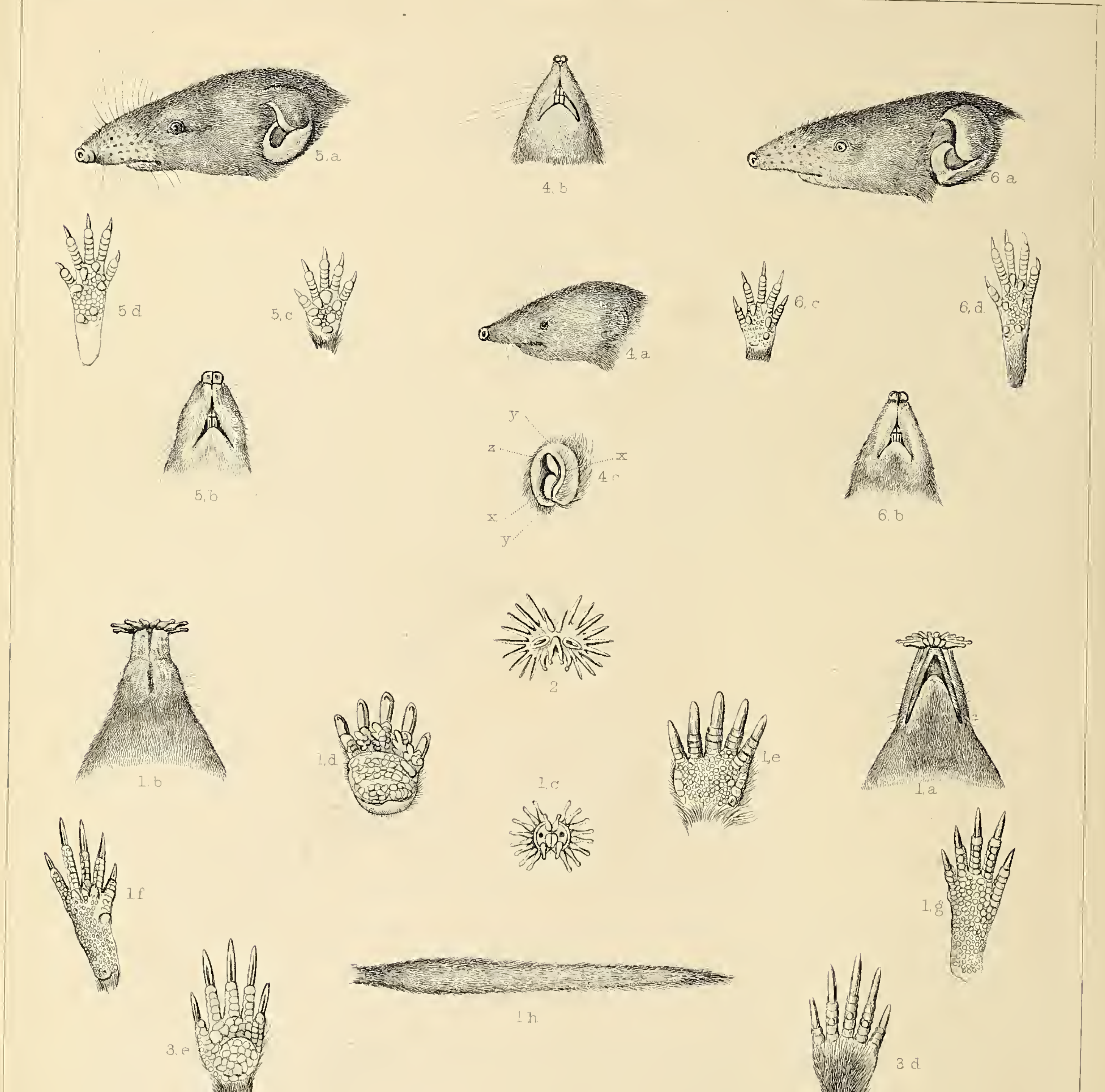
[illegible]

Figure 1.



Scalops aquaticus
Fresh specimen D.C.

Mammals. —— Plate XVIII.

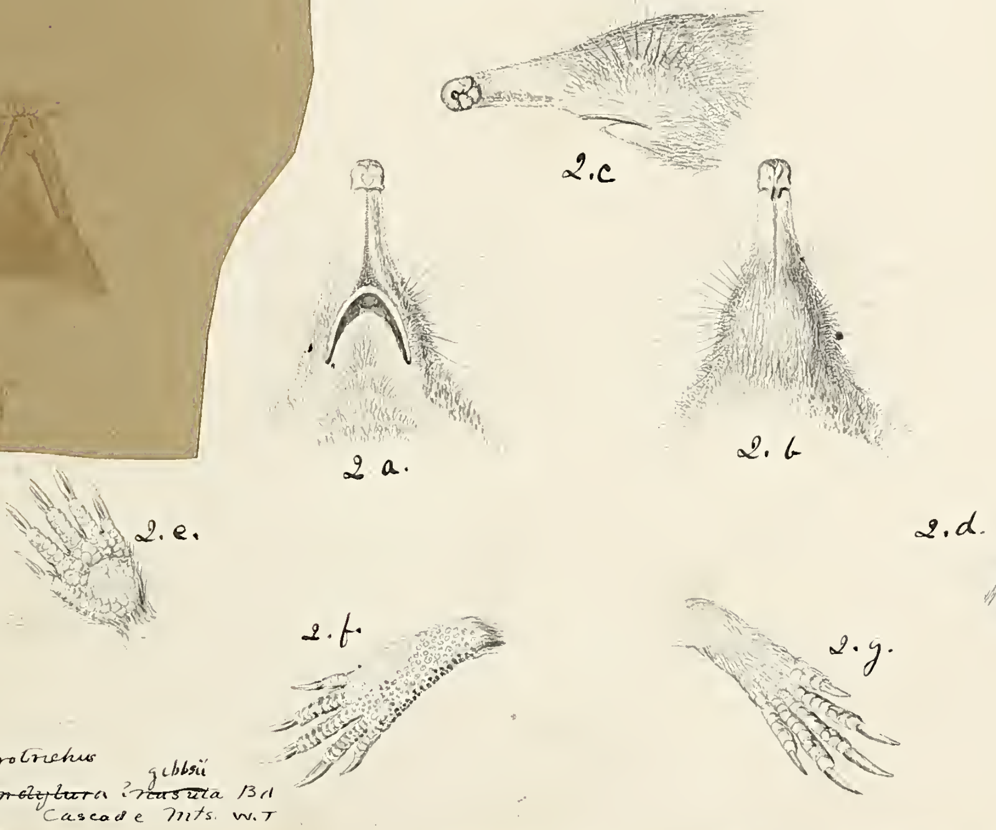


J.H.Richard del.

R. Metzeroth sc.

13

mag. 2 diam.



may. 10/55 Urotrichus

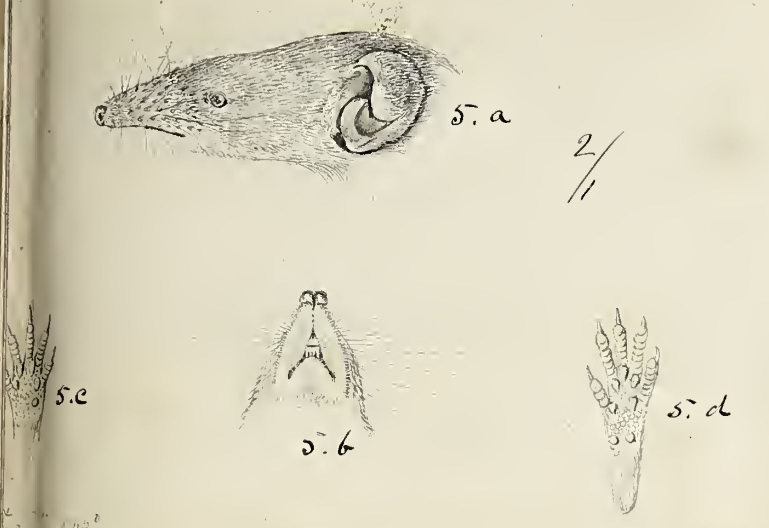
~~Condylura~~ ? ~~nasuta~~ gibbsii Bd

662
1843 Cascade Mts. W.T

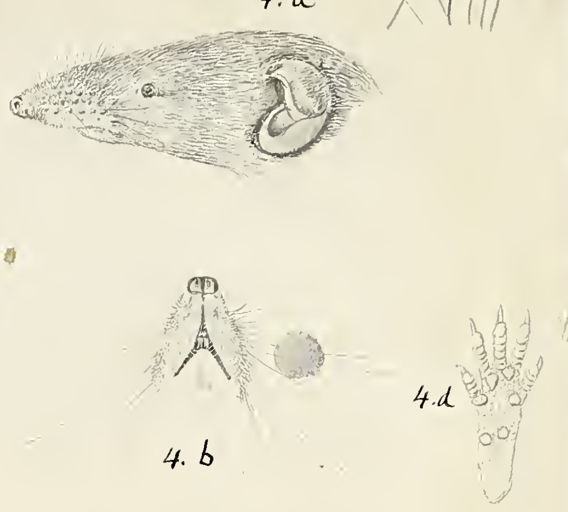
1259

Figure 5

XVIII

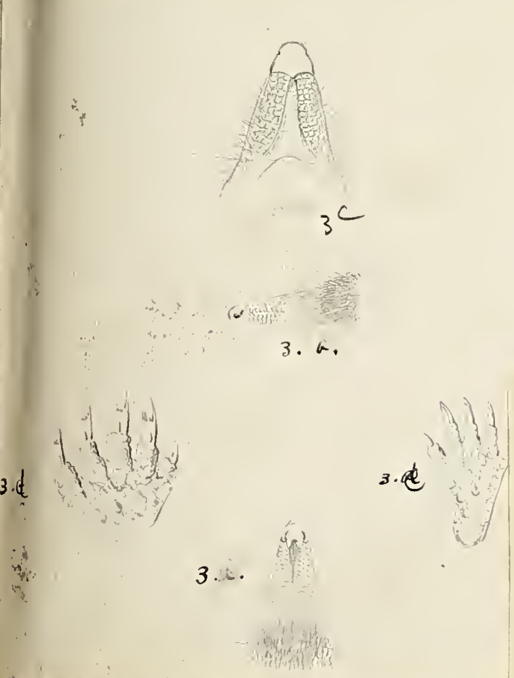


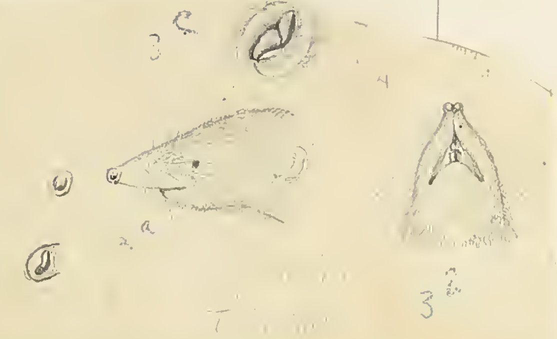
pts. 4·2
Vol. II



126
Cape [illegible]
P.T.

Figure 3-3





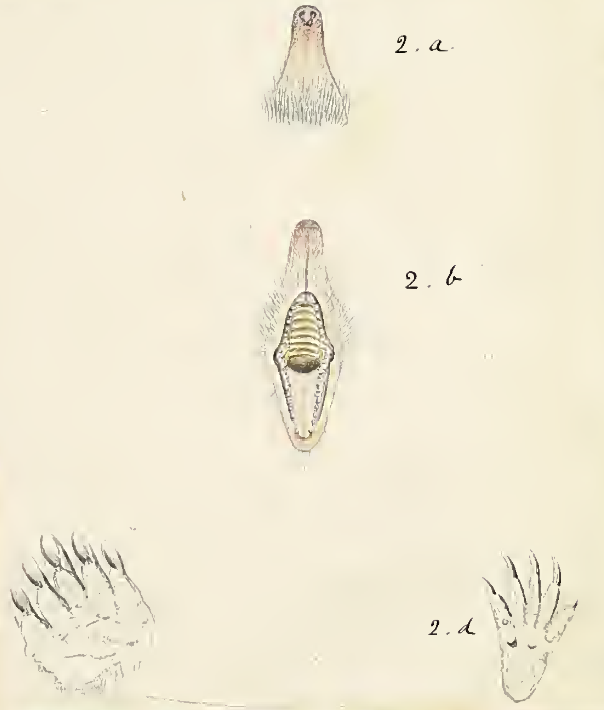
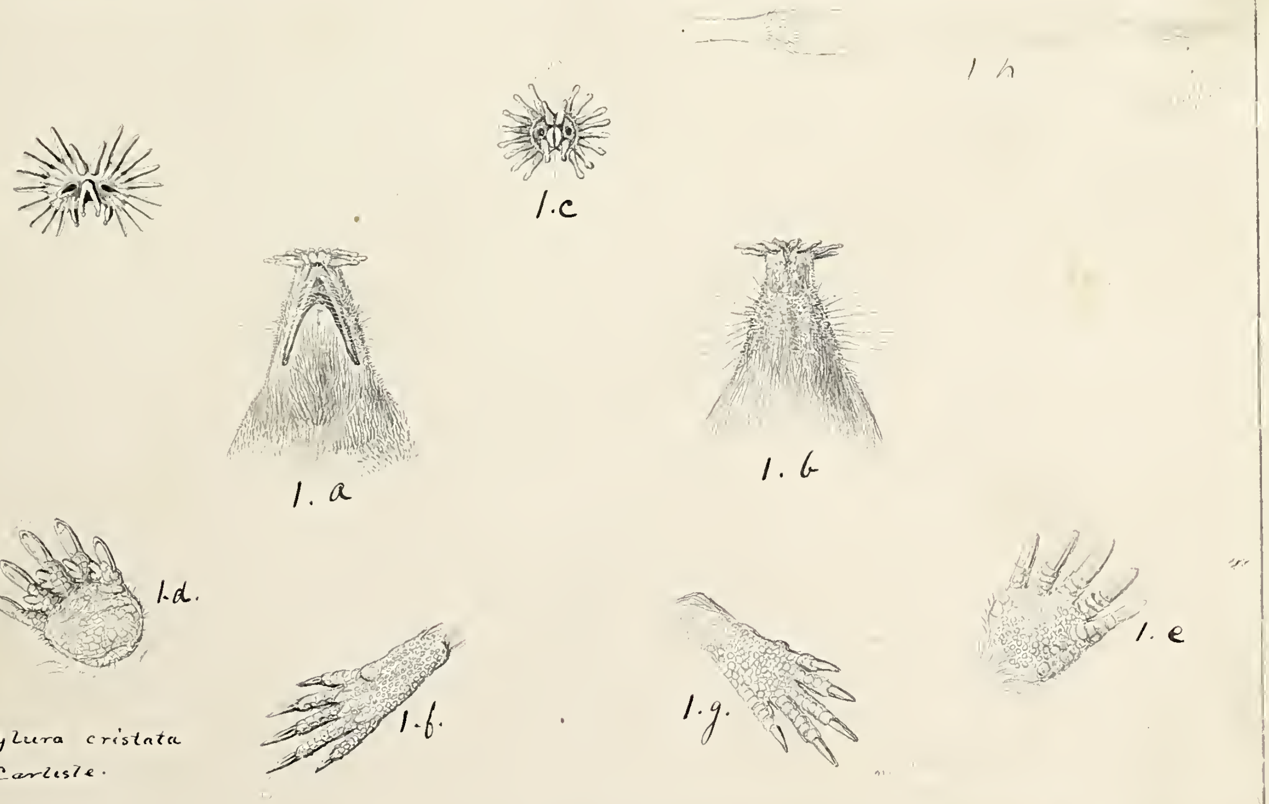


Fig 1.

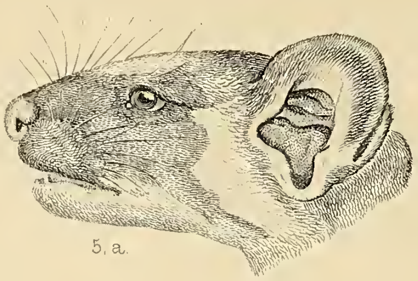
B



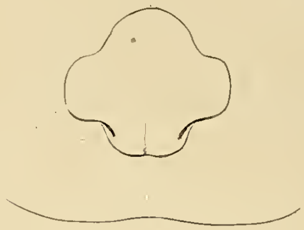
2219
Middleton

Condylura cristata
Carlisle.

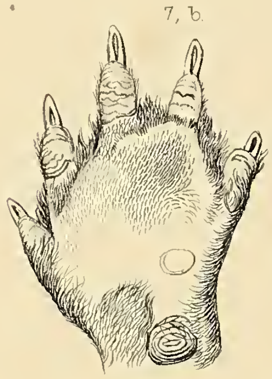
7, b.



5, a.

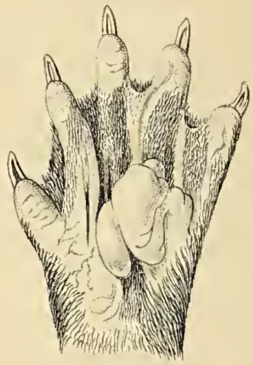


8, a.



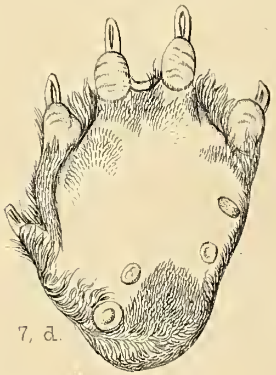
7, c.

7, a.

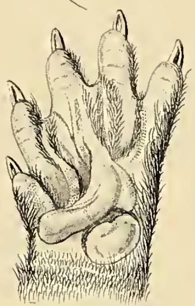


8, c.

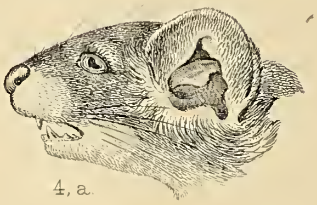
6, a.



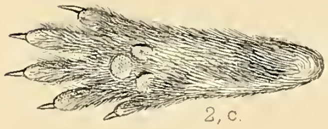
7, d.



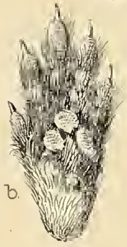
8, b.



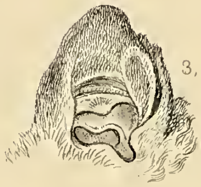
4, a.



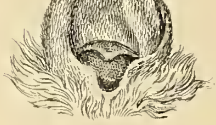
2, c.



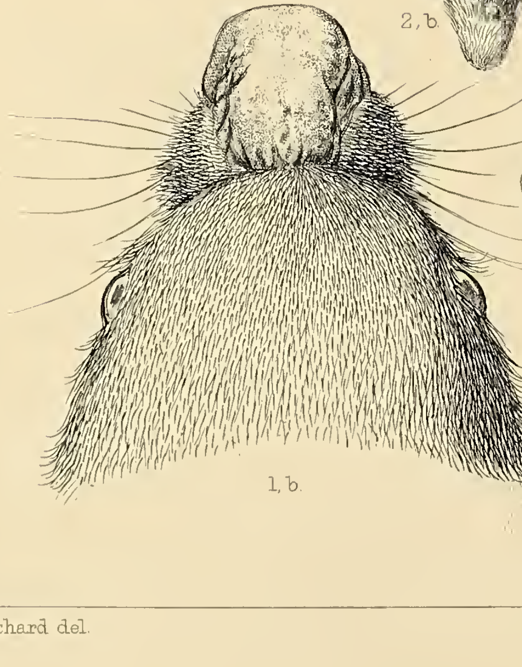
2, b.



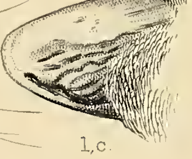
3, a.



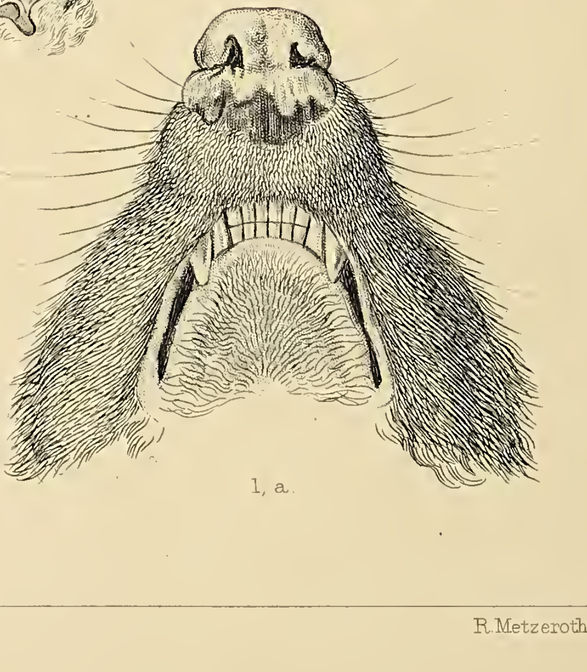
2, a.



1, b.



1, c.



1, a.

J.H.Richard del. R.Metzeroth sc.

7.12.156

XIX

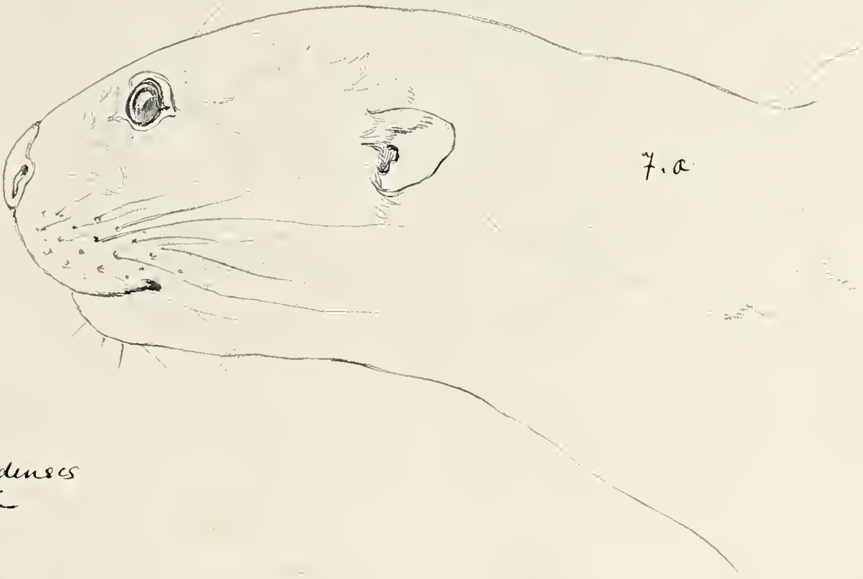
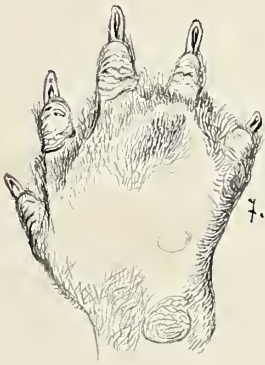
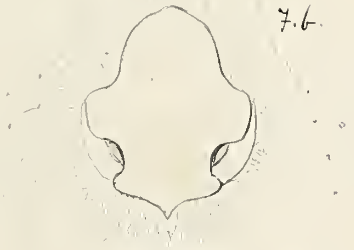


Fig 7

7.a

Lutra canadensis
D.C


7.c


7.b.

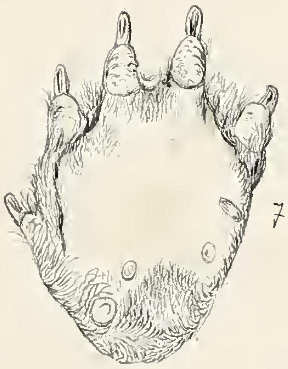
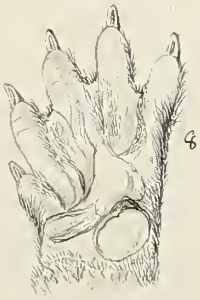


Fig. 7

7.d

8.a


8.b.

Lutra californica
J.S.N
Oregon

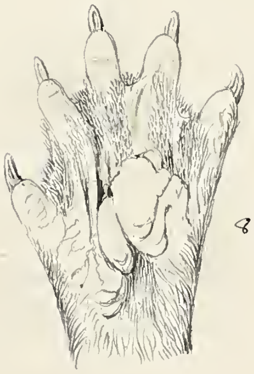


Fig. 8

8.c

L

C.

XIX.

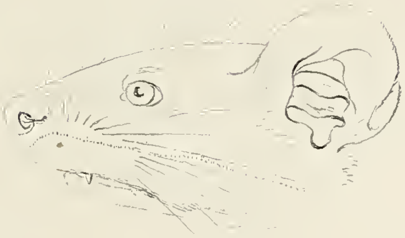
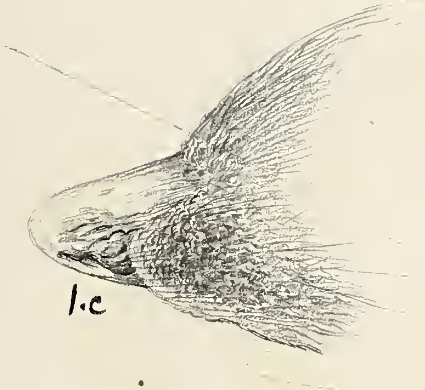


Figure 6.a

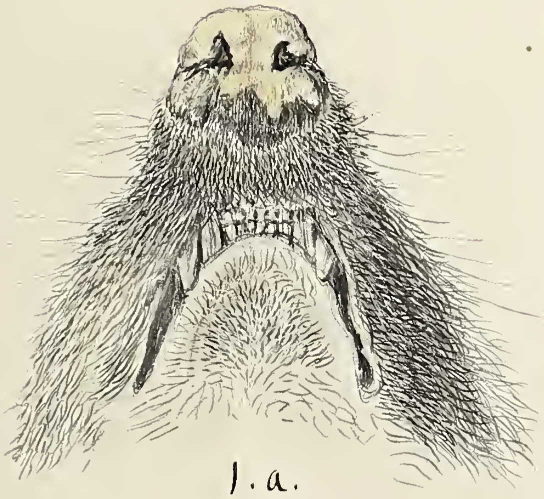
West Northfield Ill.

Putorius

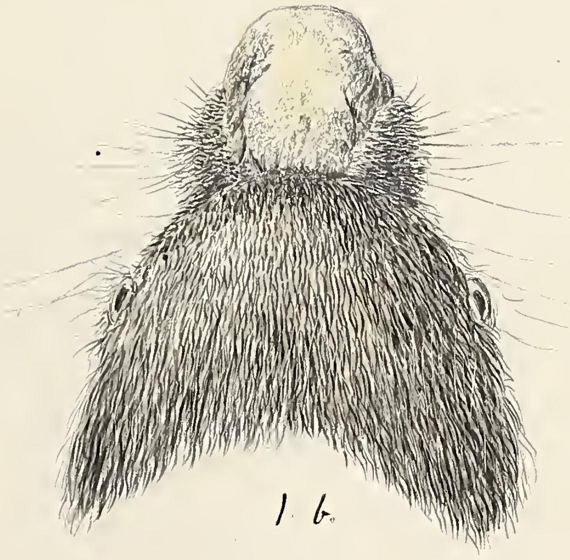
Fig. 1.



1.c



1.a.



1.b.

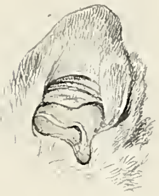
Mephitis mesoleuca
790/1866. W. Texas. Capt. Pope

C.

XIX

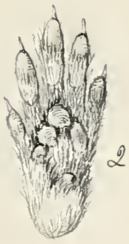
Putorius xanthogenys
536/1849 near San Francisco

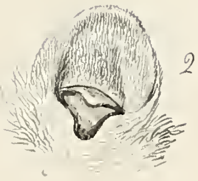
Figure 3



Putorius
654. Ft. Steilacoom,

Figure 2.





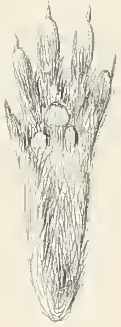
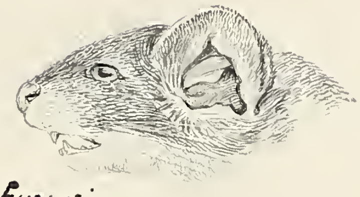
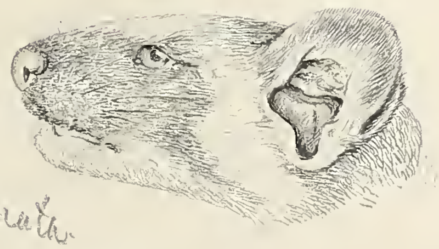


Fig. 4

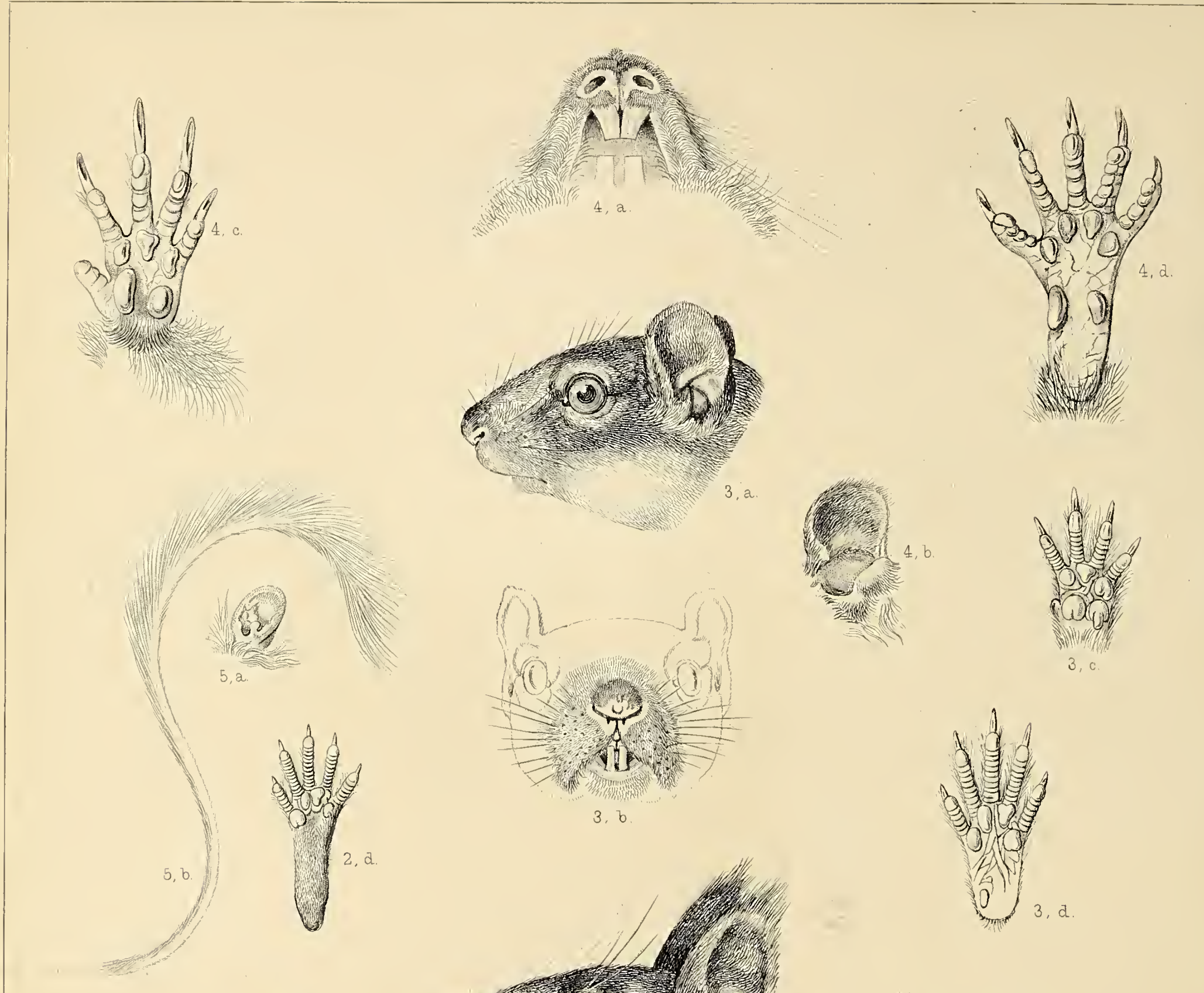


Putorius Fuscus:
Bachm.

Figure 5.



Putorius frenata
hab. from Matamoras



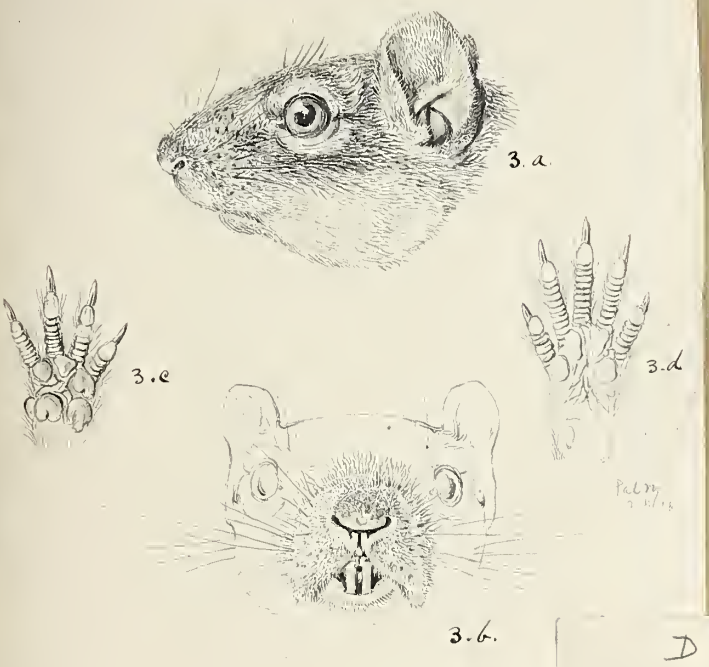
J.H.Richard del.

R.Metzeroth sc.

X X D

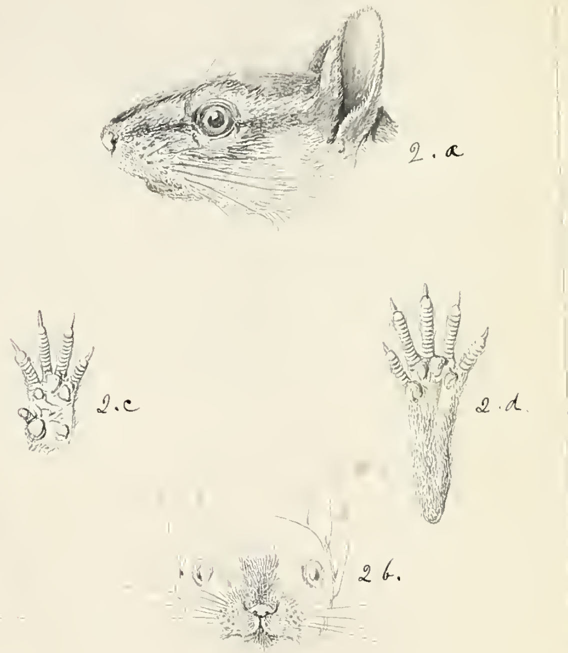
Figure 3

124



1272 Spermophilus lateralis
upper des Chutes
C.T

206

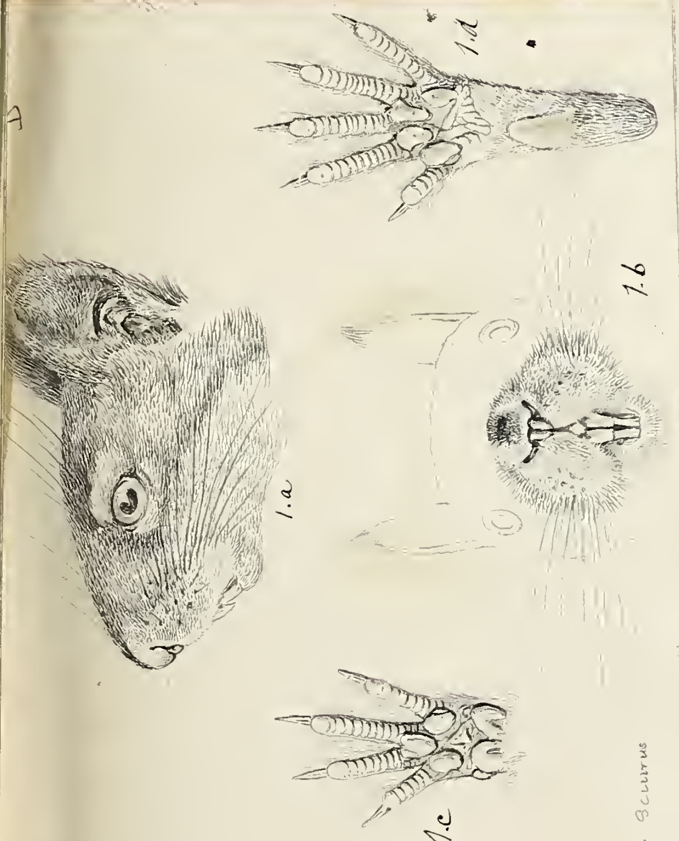


D

Fig. 5

Perognathus penicillatus, Woodh.
San Francisco Mts

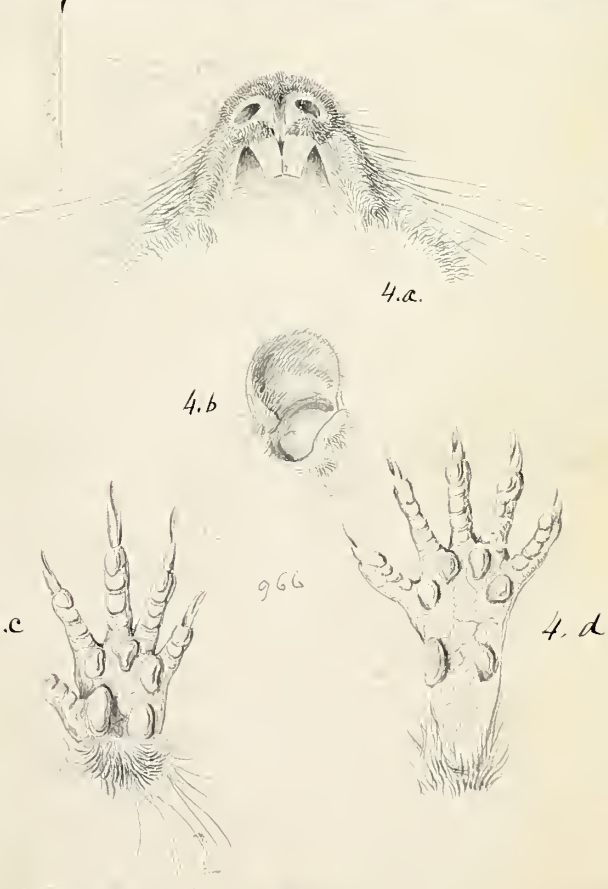
D



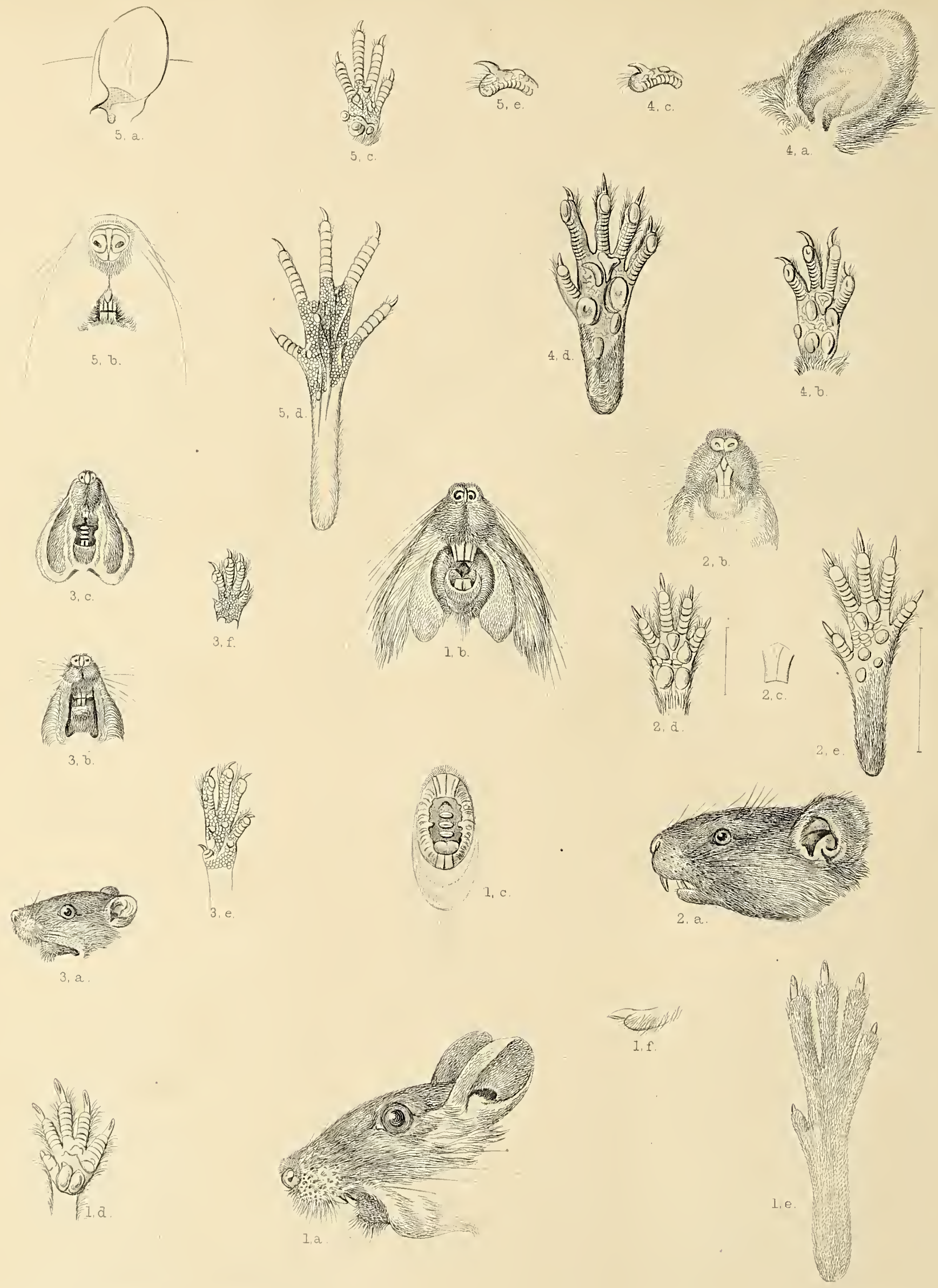
1265 Sciurus
Upper Des Chutes Valley
C.T

Figure 1.

D



766 [illegible]
Aston

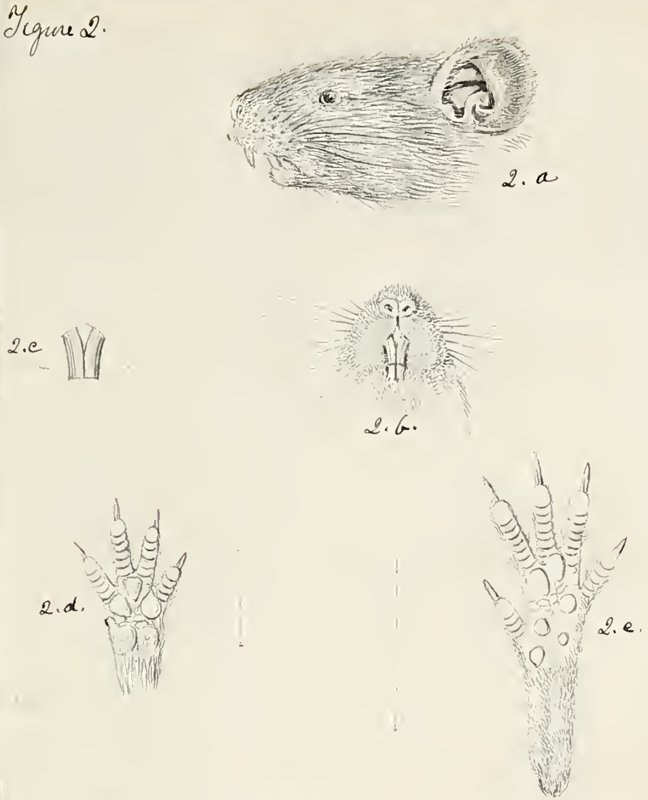


J.H.Richard del.

R.Metzeroth sc.

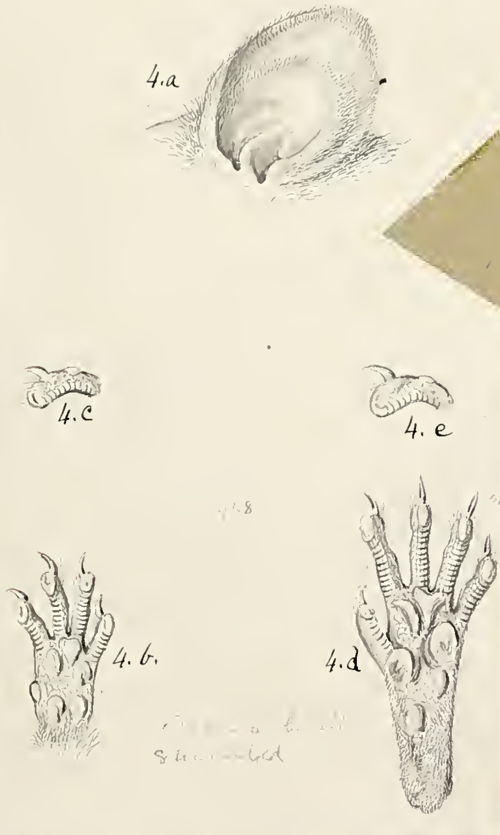
E 1271

Figure 2.



1271 arvicola
Bank of Lost River Cal
577.

Figure 4 E.



968

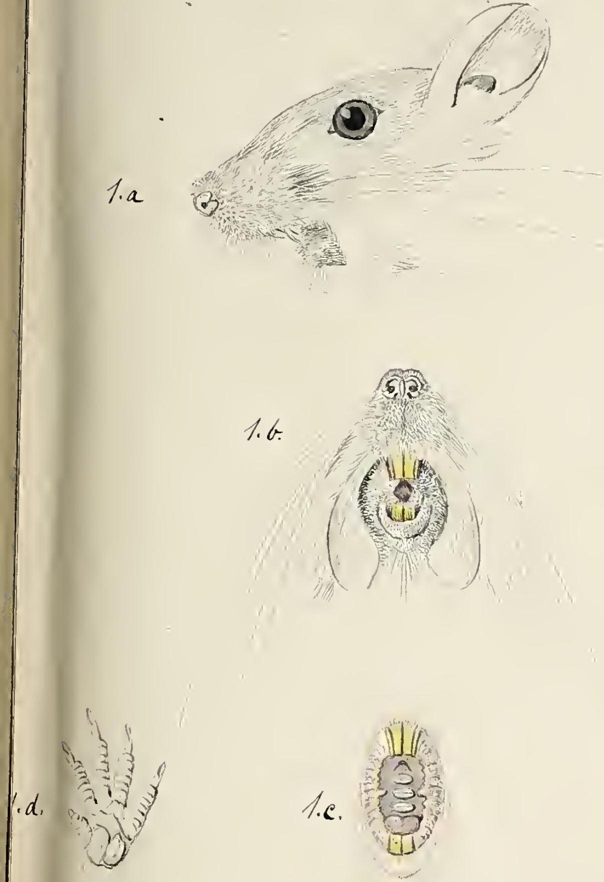
[illegible]
Shrivelled

968 Neotoma occidentalis
Astoria

E F 3

F 1

XXI



Dipodomys

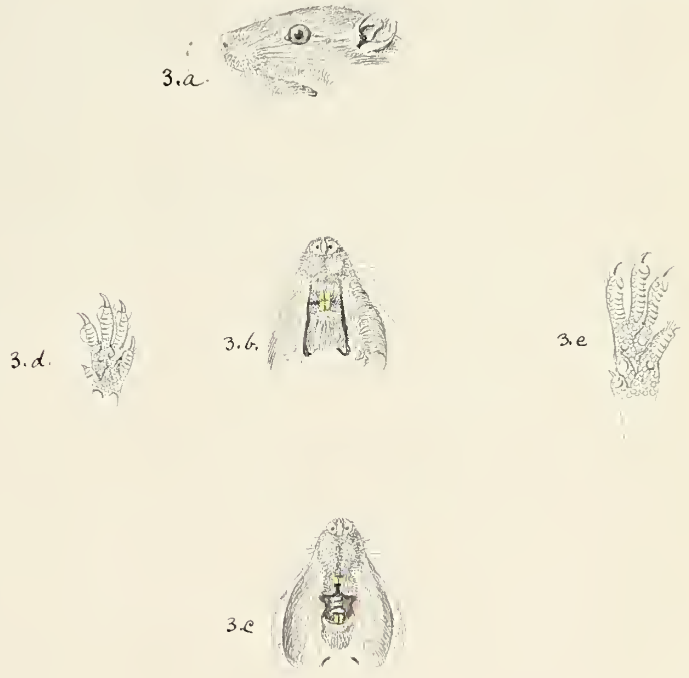
Coahuila or N. Leon. Prob. Monterey

Couch. alc
same as cold. fig

pidomys. Couch alc

Perognatus

Mo. Riv. ab. Ft. Union. Dr. Suckley. In alc. same as cold. Fig.

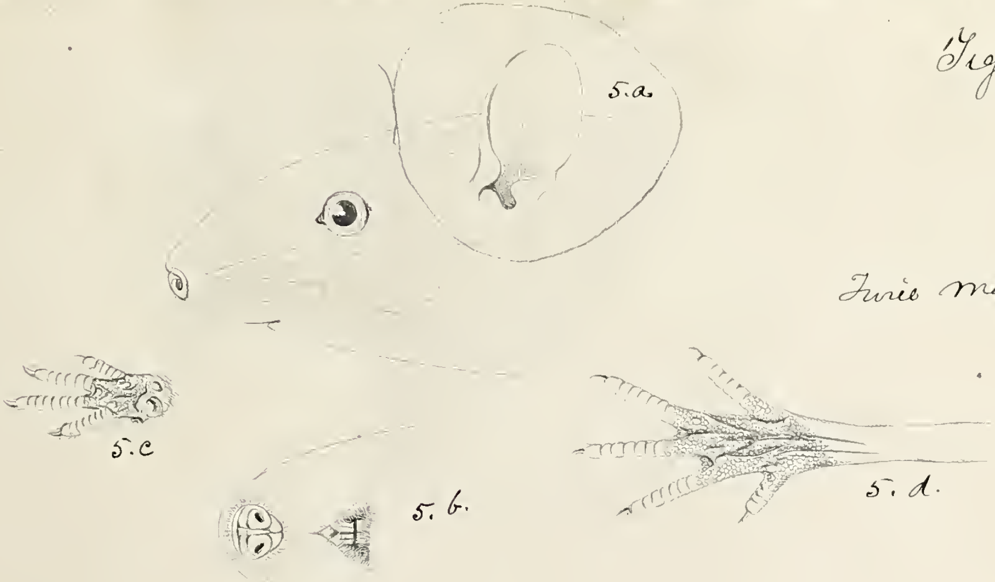


Perognatus. seven in alc

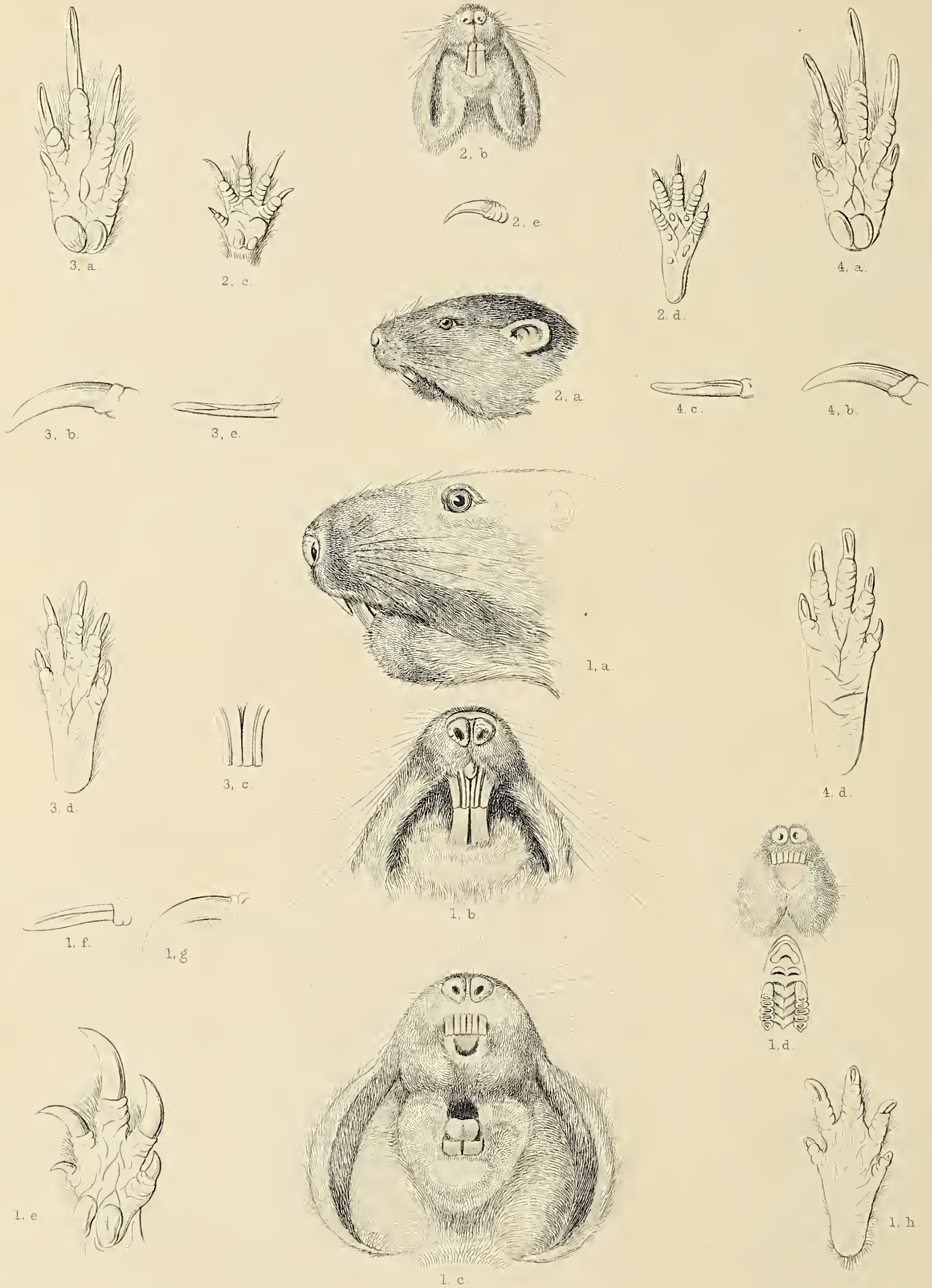
E

Figure 5.

Twice magnified



Jaculus labradoricus — Penn.



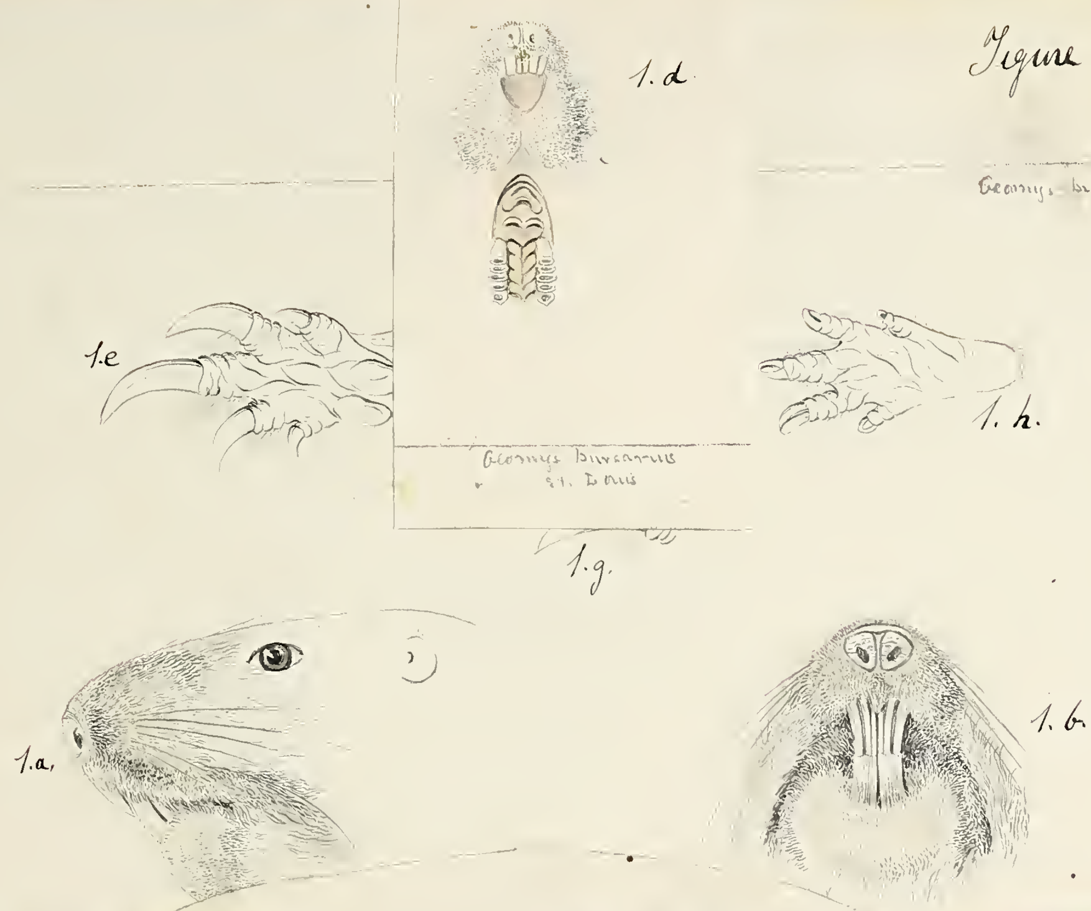
J.H.Richard del.

R.Metzeroth sc.

F.
Figure 1.

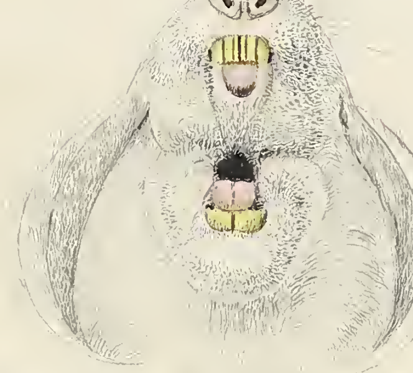
XXII

Geomys bursarius
St. Louis

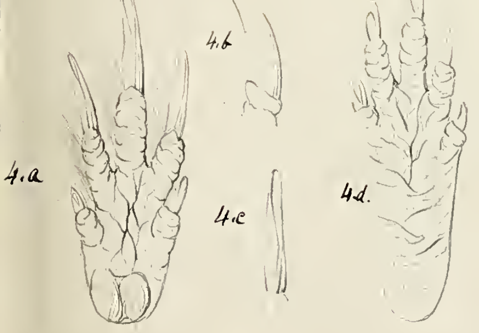


Geomys bursarius
St. Louis

F.
Fig. 1.

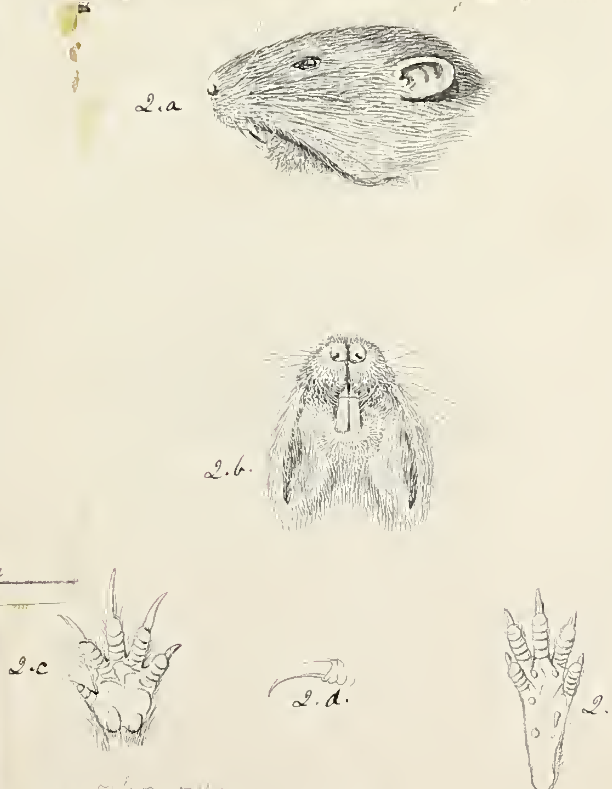


F
Figure 4



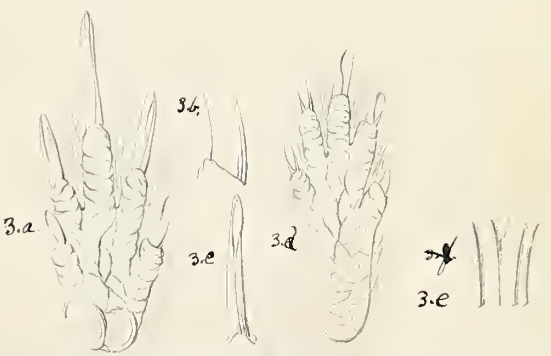
Left feet.

Geomys hispidus
mex



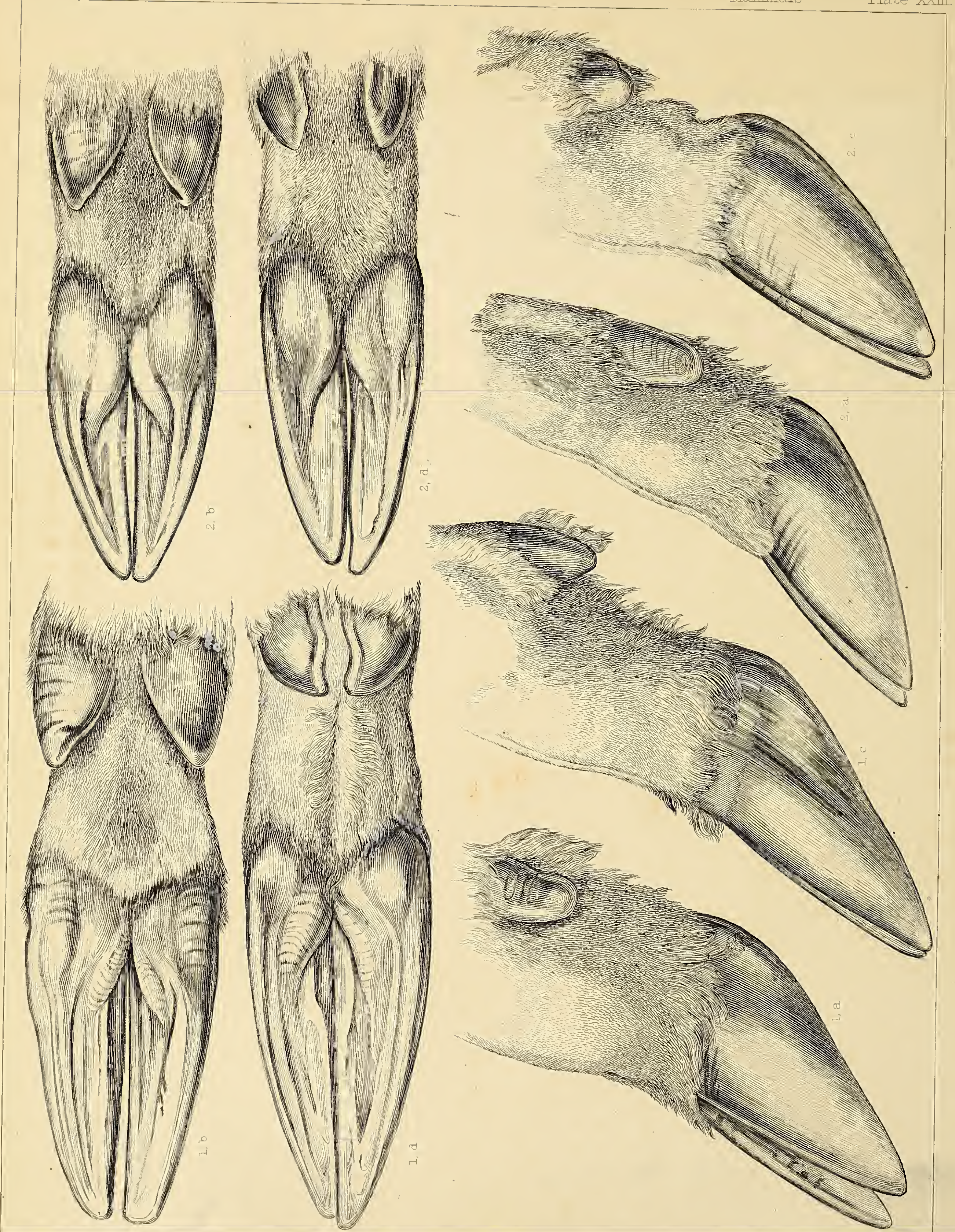
1260 Thomomys
Carson [illegible] Valley Cal.

F
Figure 3.



Left feet.

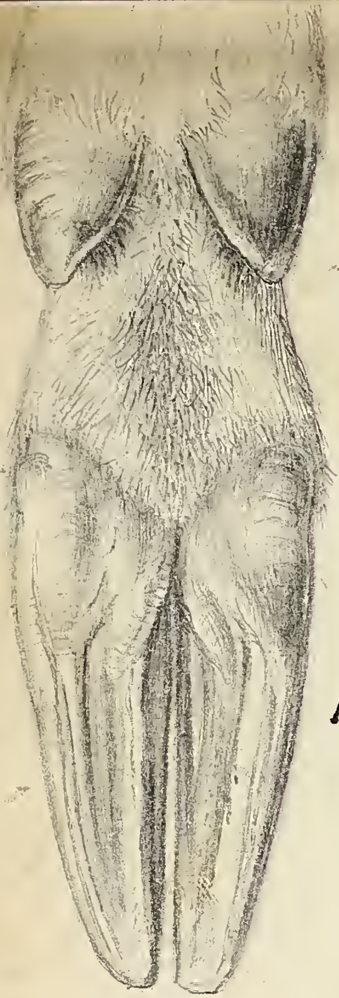
Geomys pinetis Fla.



R. Metzeroth sc.

XX III

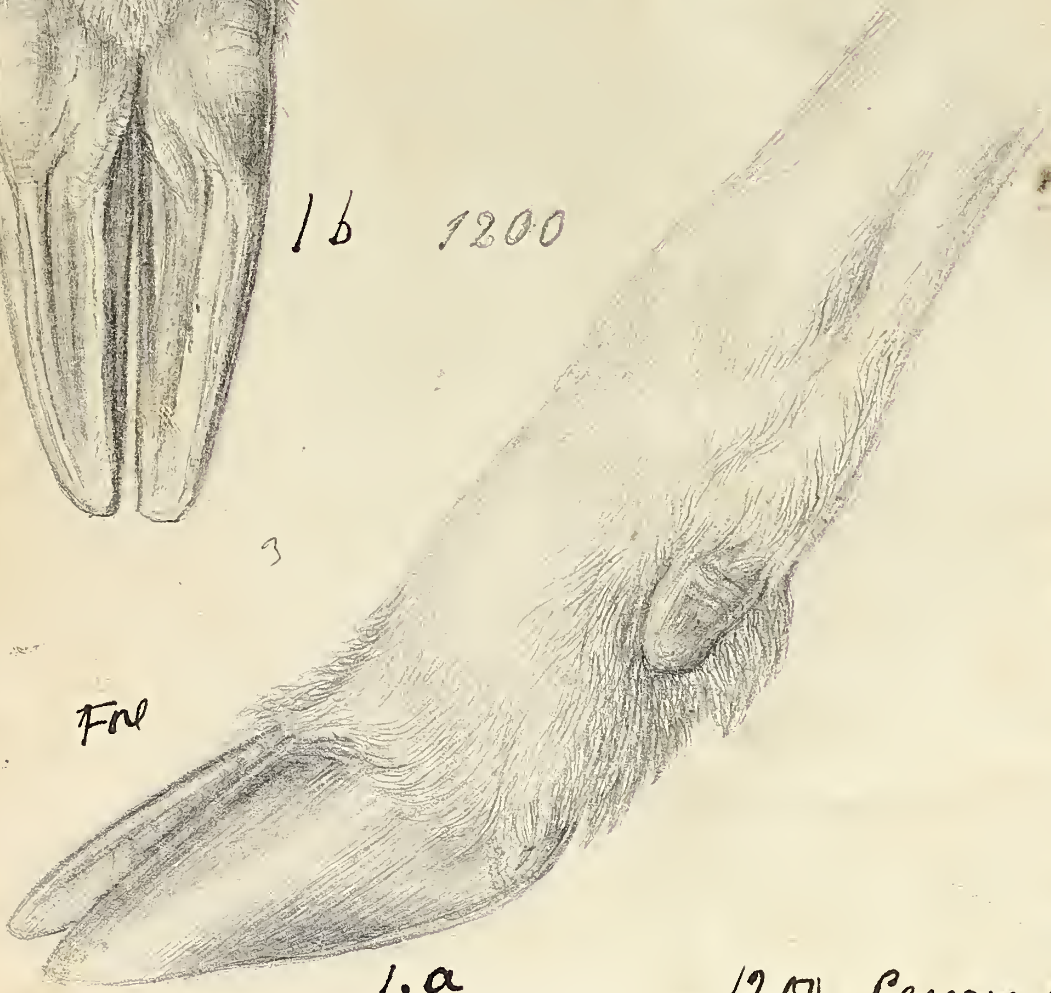
Fig 1



1b 1200

3

Fore

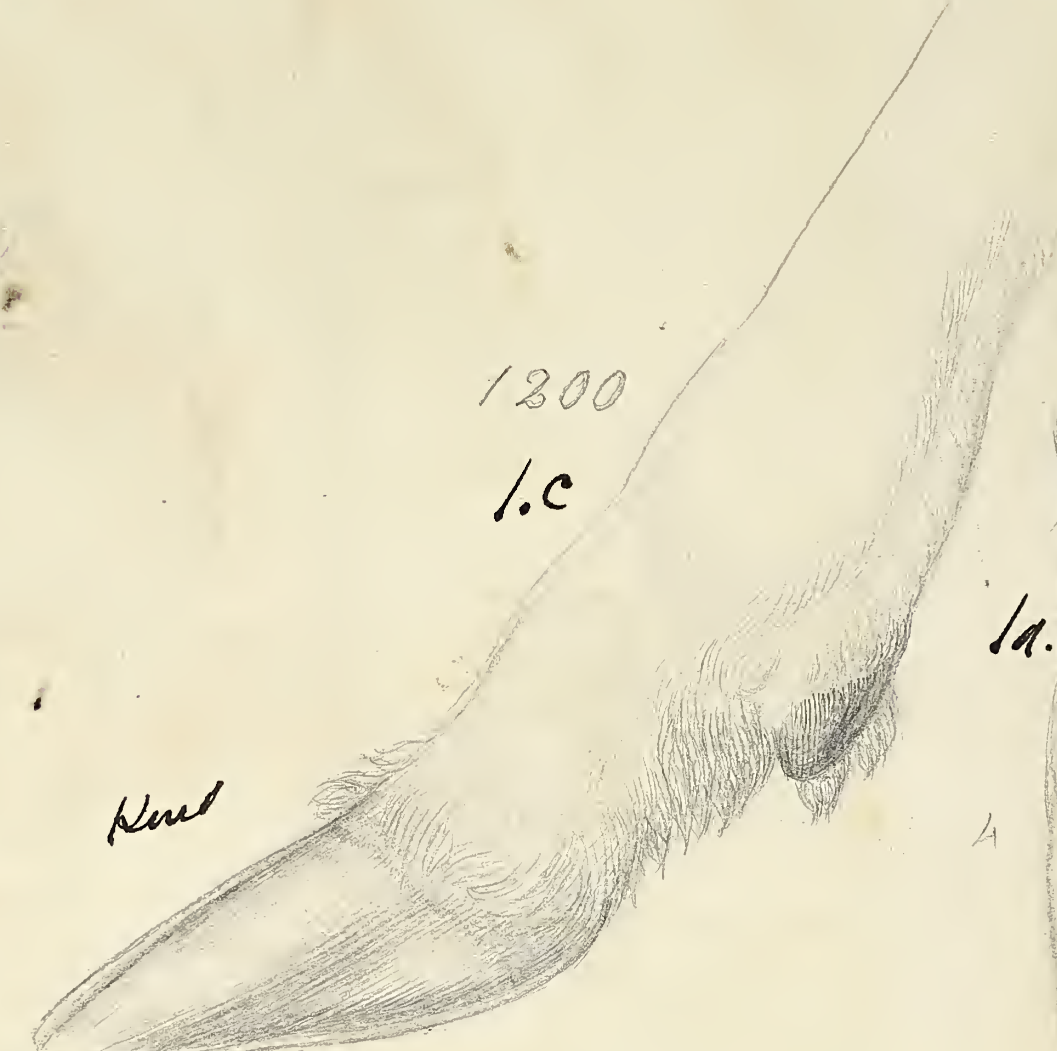


1.a

1200

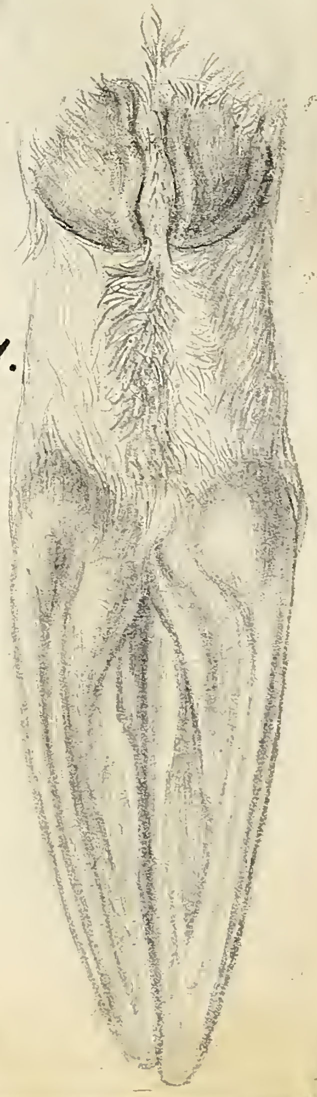
1.c

Hind



1d.

4

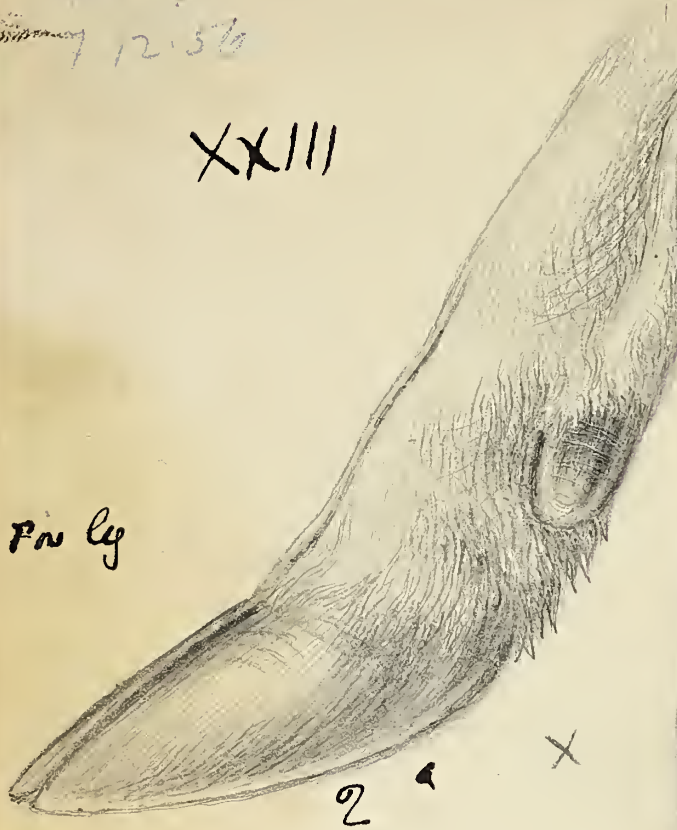


1200 Cervus macrotis
upper des Chutes
J.S.N.

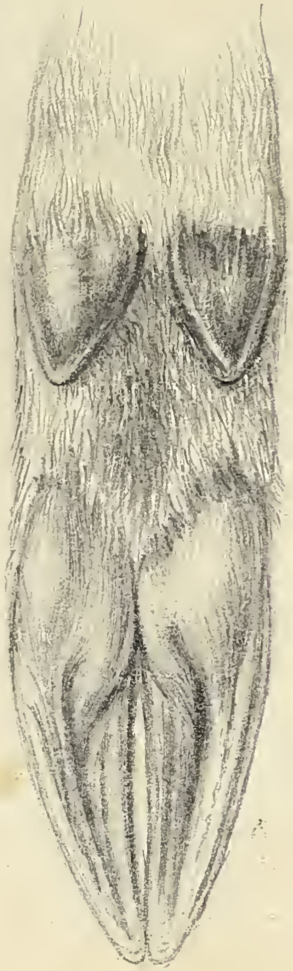
7 12.56

XXIII

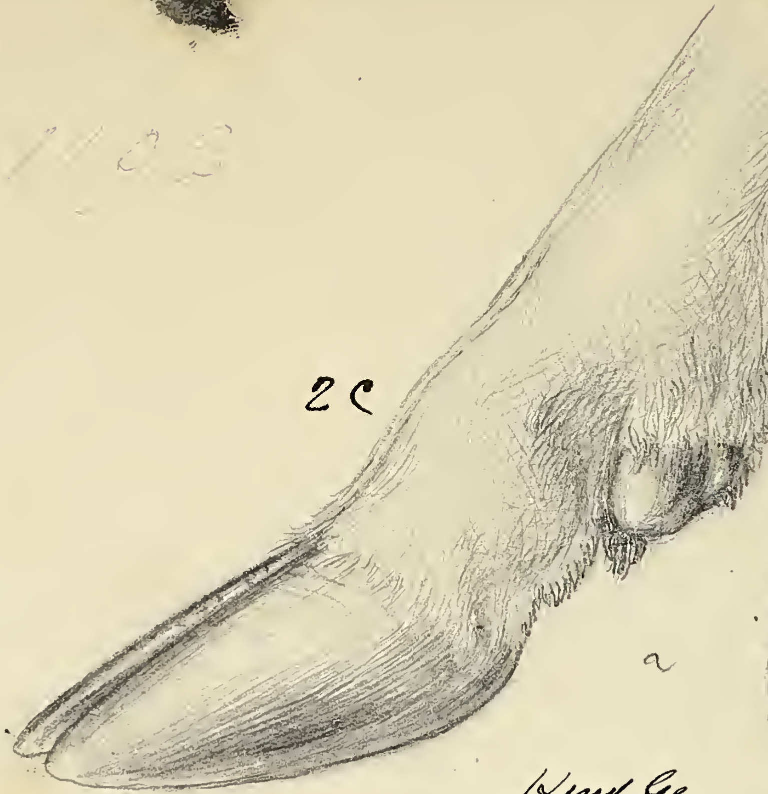
Fore leg


2 a

×

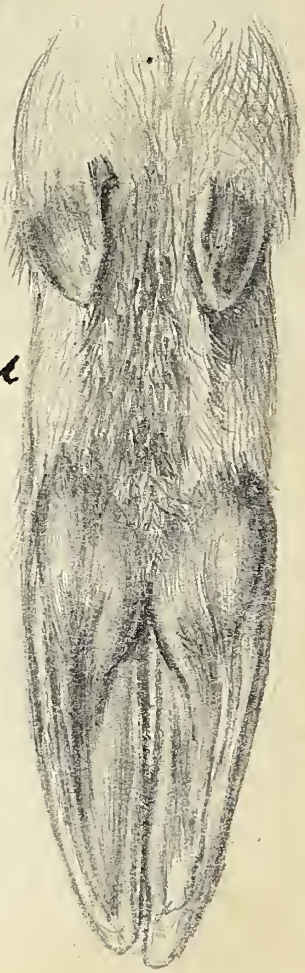

2 b

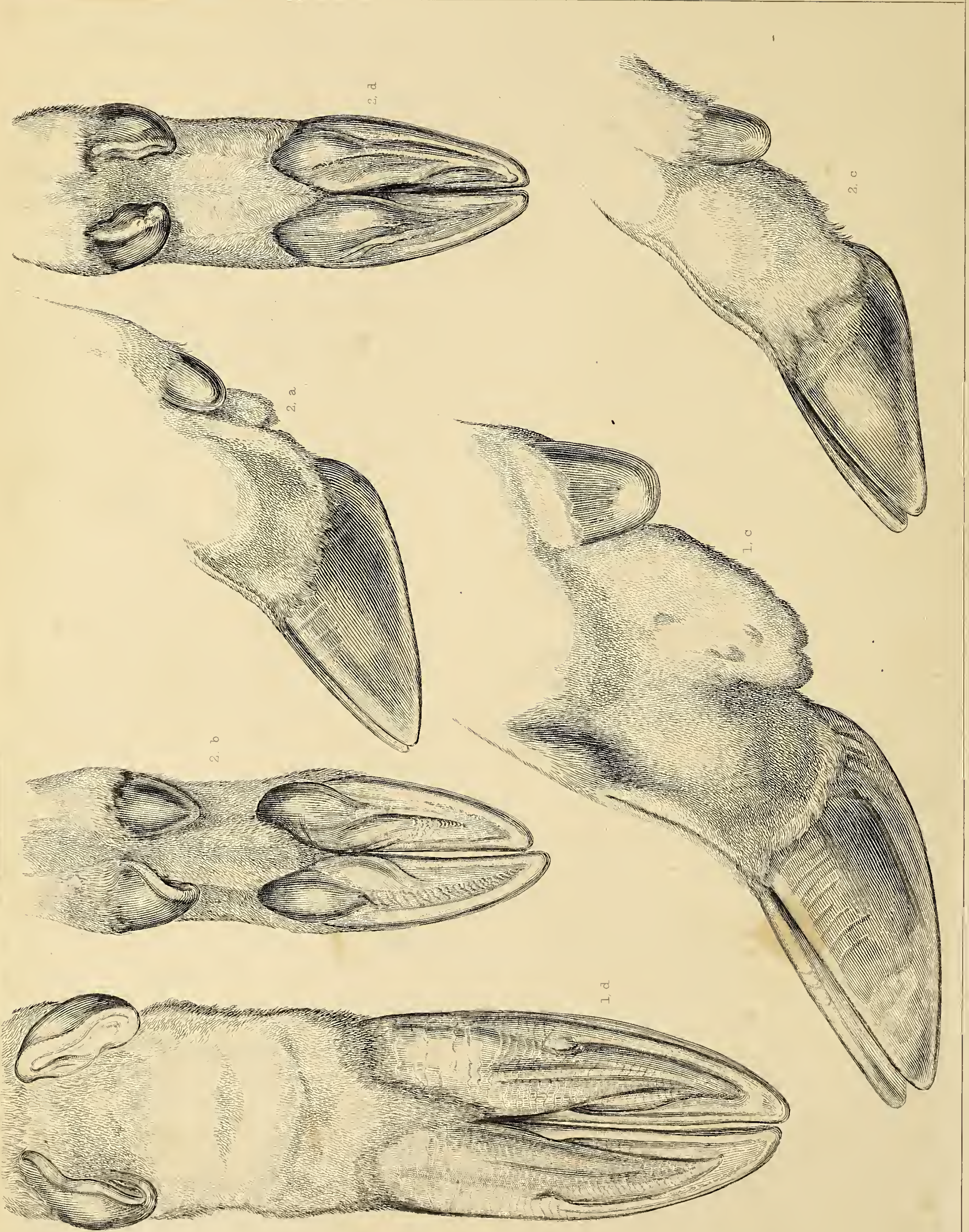
$\frac{1192}{2053}$ ♀ Cervus lewisii
San Francisco


2 C

a

Hind leg


2 d

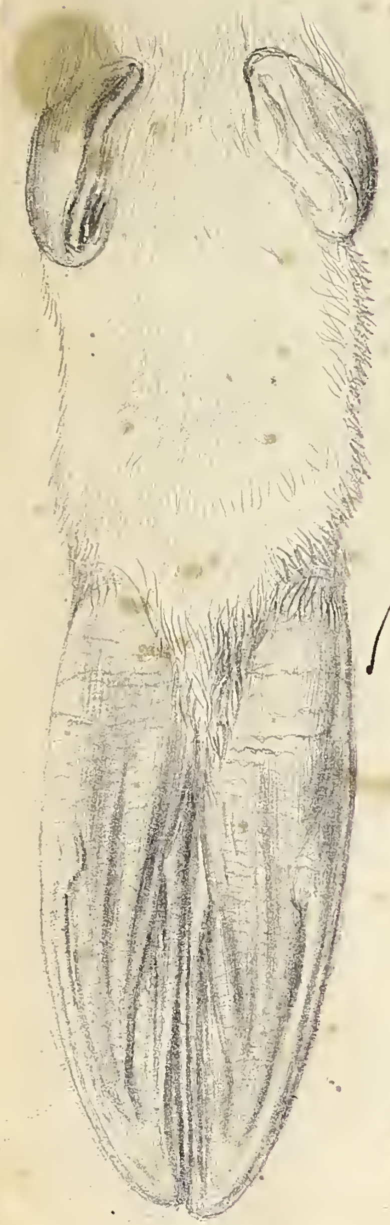


R. Metzeroth sc.

[illegible]
7.12.58

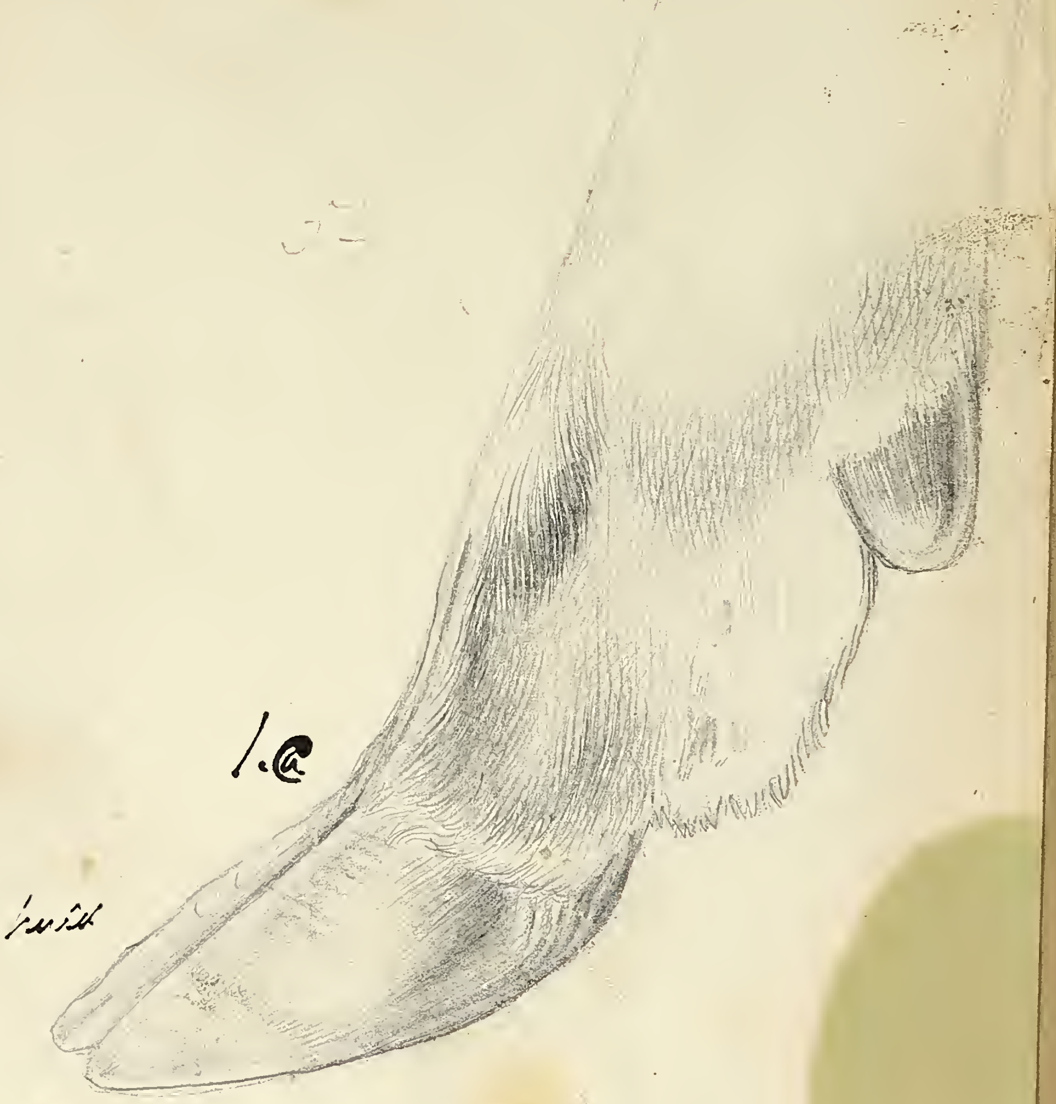
XXIV

Fig 1



1.b.

54. Cervus virginianus.



1.a

[illegible]

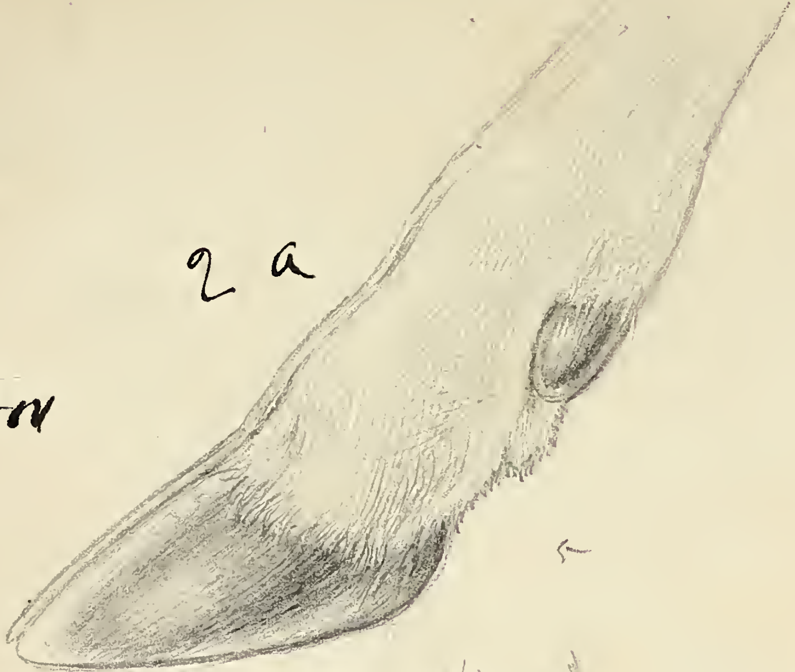
J. A. July 18th/06 No. 9.

XXIV.

Fig 2.

Fore

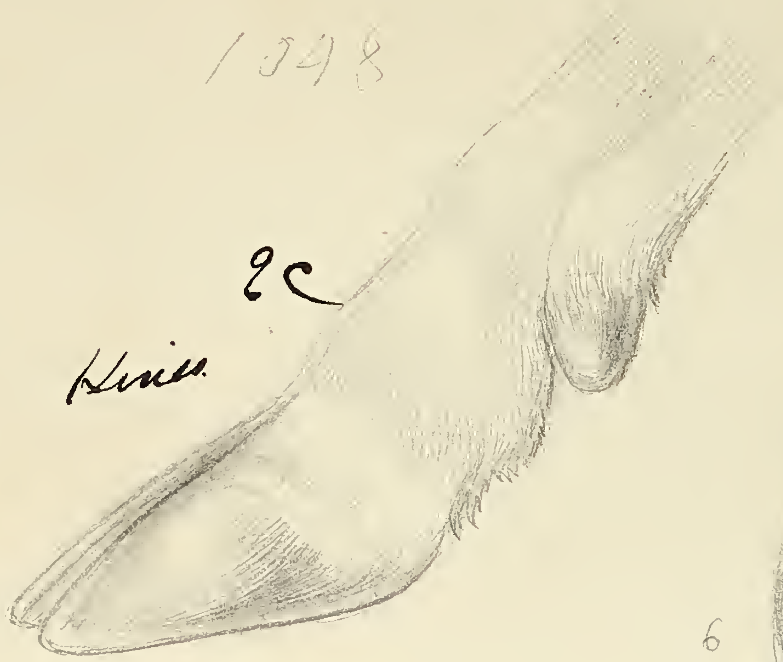
2 a



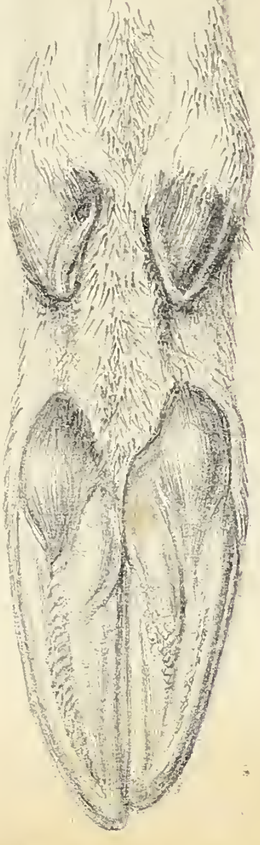
1348

Hind

2c



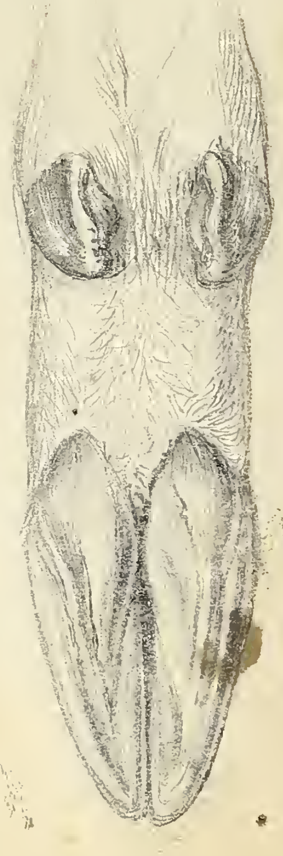
2b



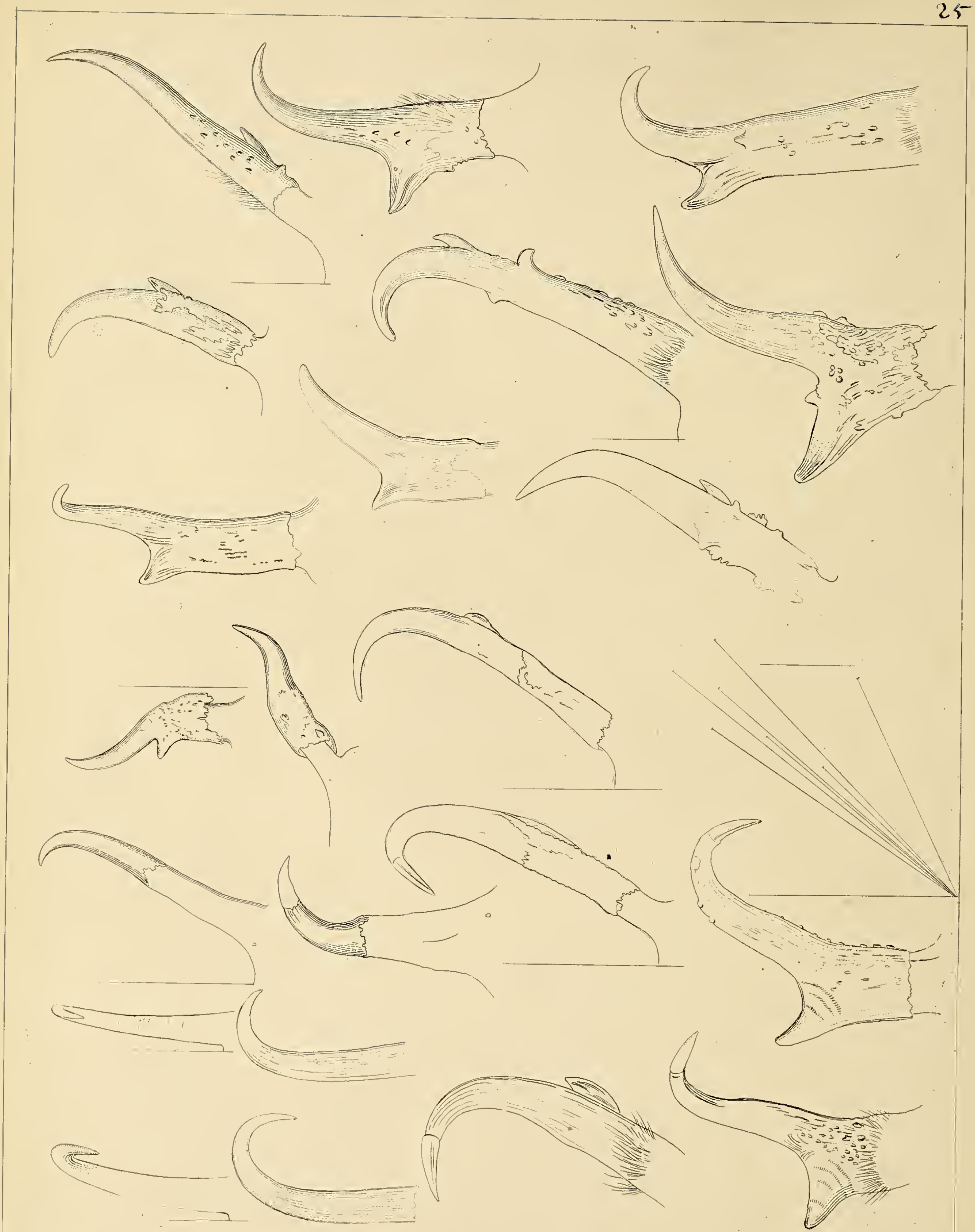
6

1048. Cervus mexicanus
San Luis Spring.
Sonora

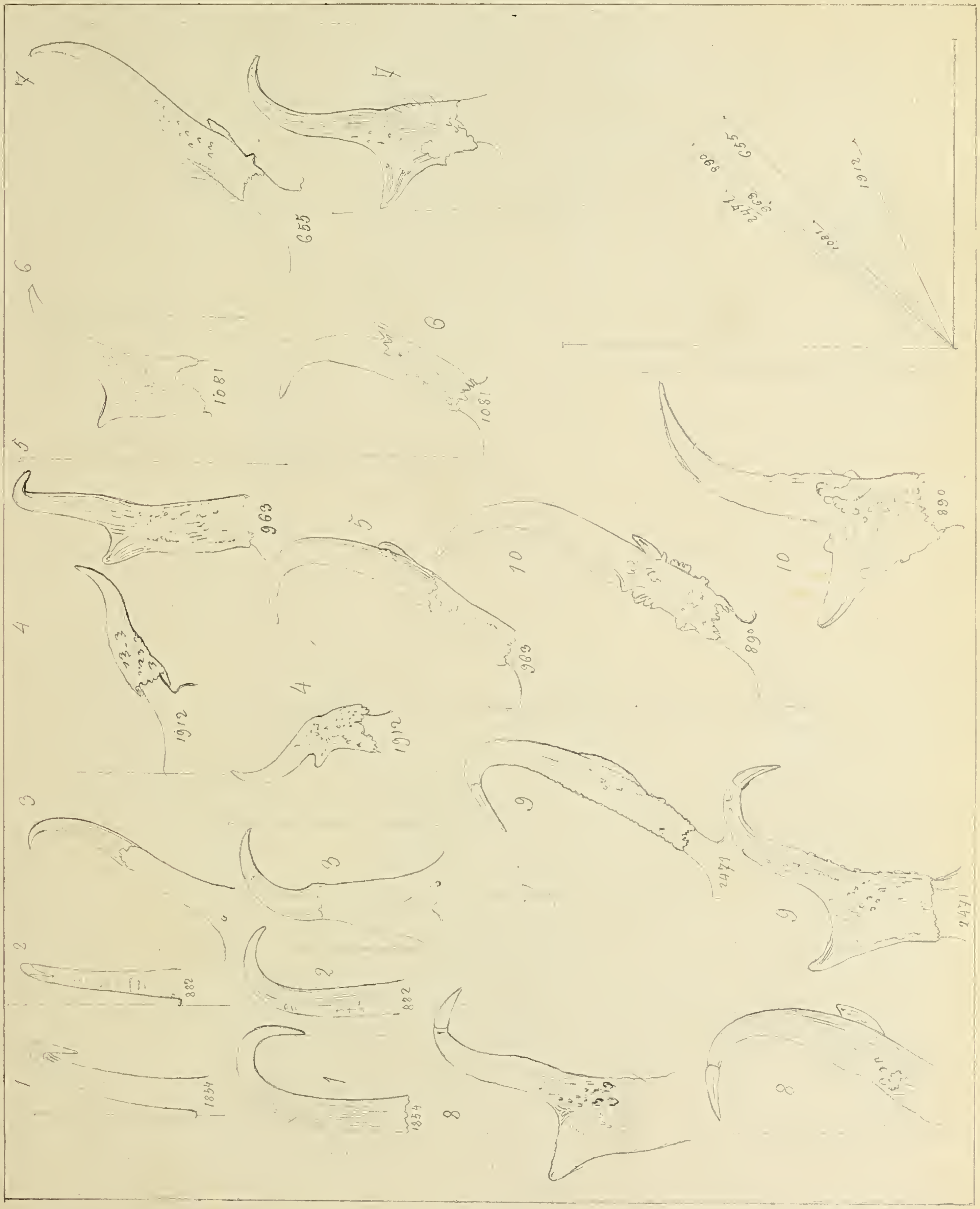
2d.

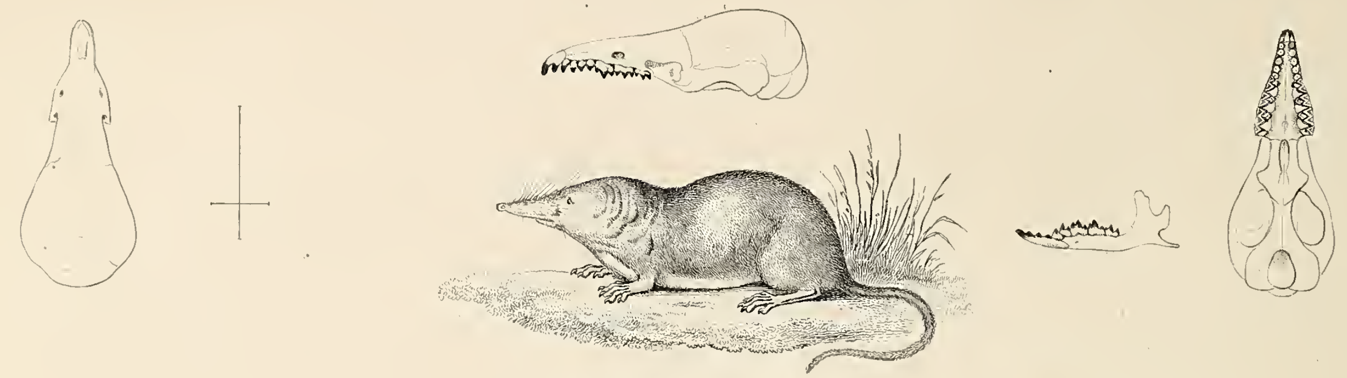


25

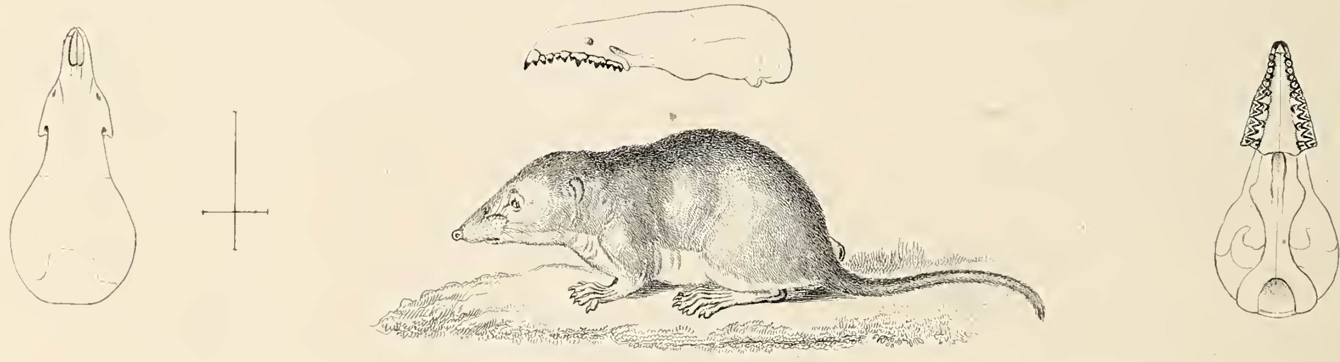


XXV

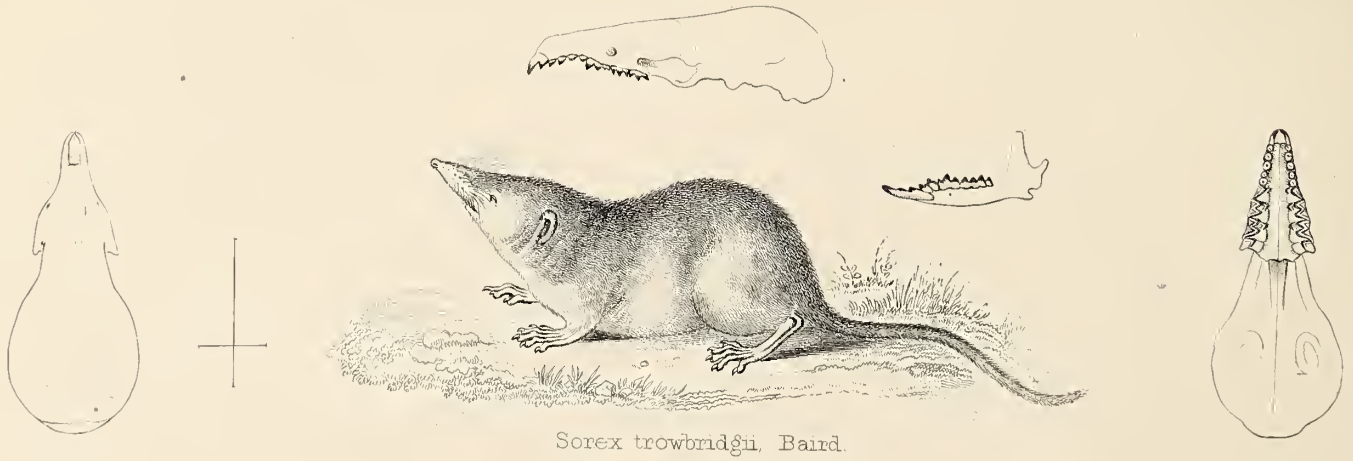

1854
1854
1912
1912
1912



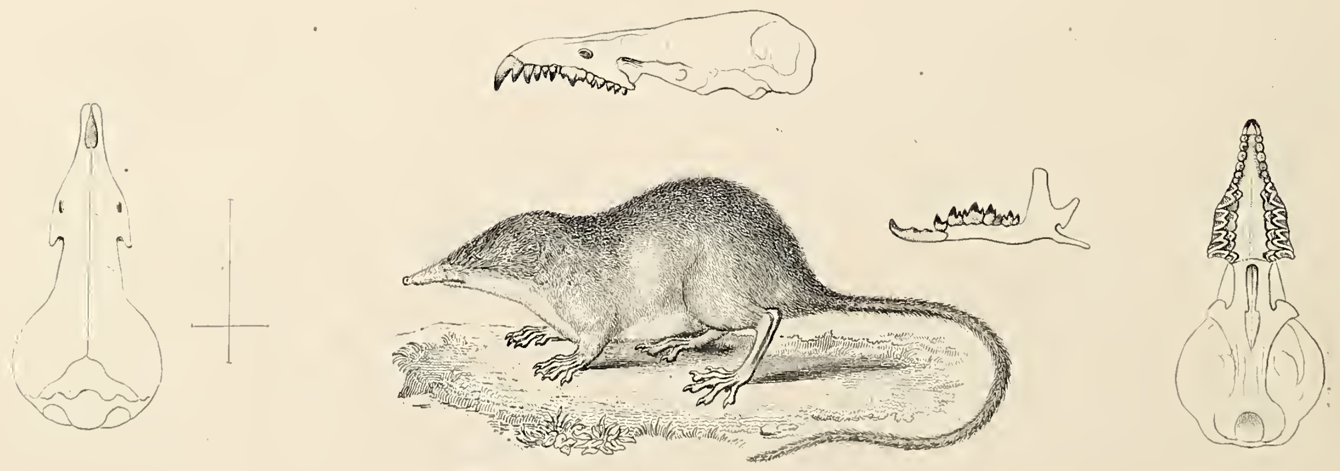
2047. Sorex cooperi, Bach.



1675. Sorex vagrans, Cooper.



Sorex trowbridgii, Baird.

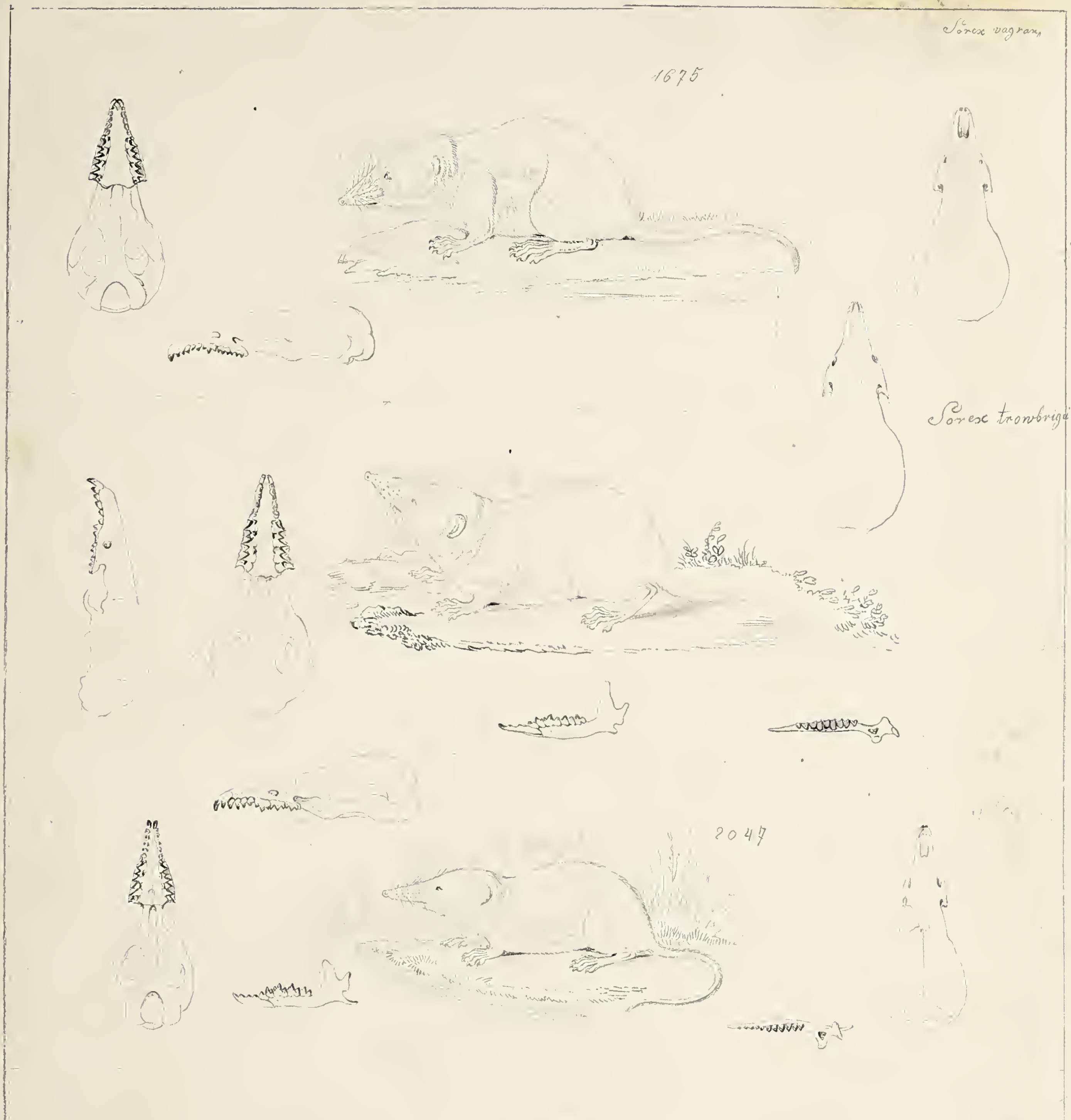


$\frac{629}{1760}$ Neosorex navigator, Cooper.

J. H. Richard del. R. Metzeroth sc.

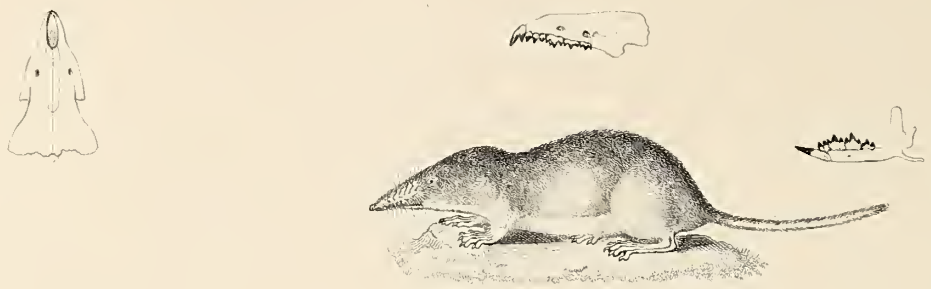
XXXVI

8

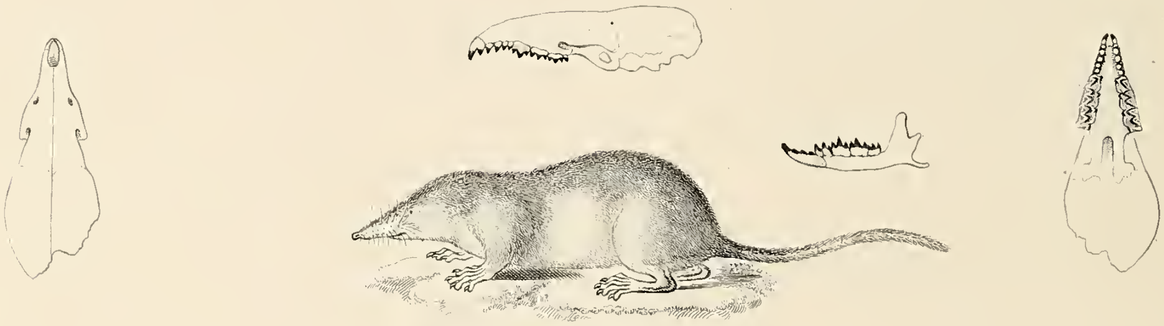


X

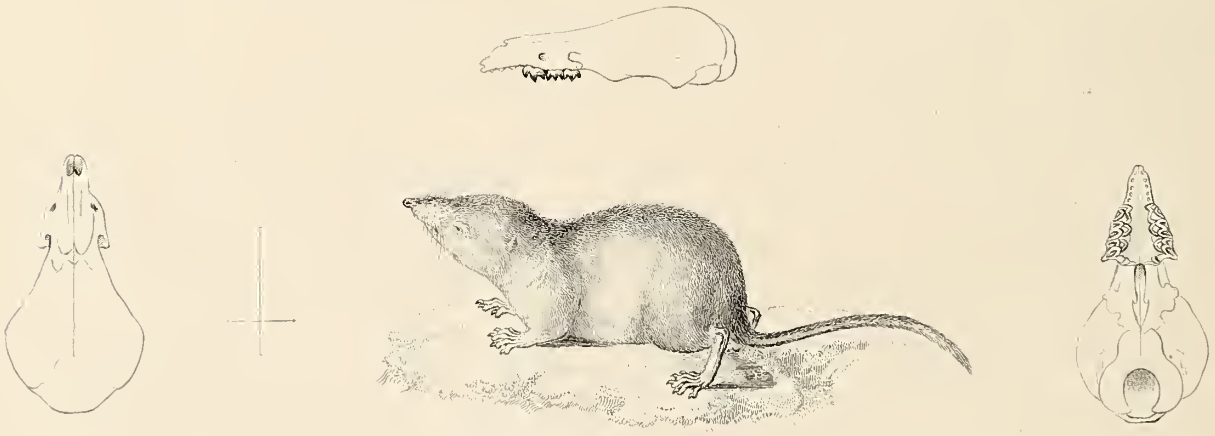
9



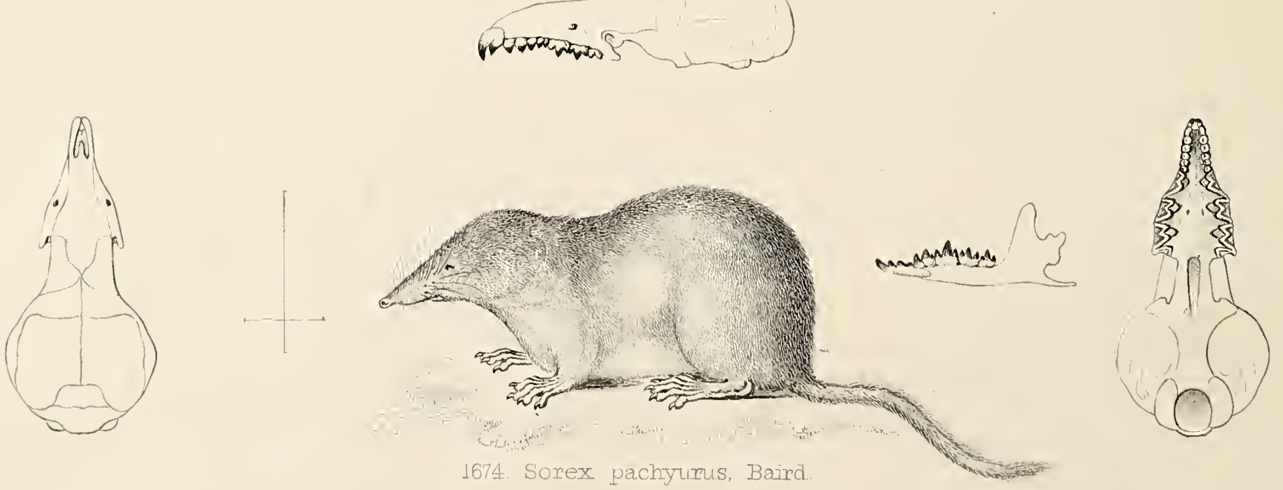
1686. Sorex thompsoni, Baird.



1685. Sorex haydeni, Baird.



1677. Sorex suckleyi, Baird.



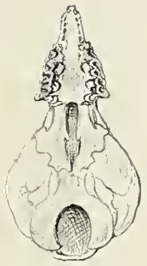
1674. Sorex pachyurus, Baird.

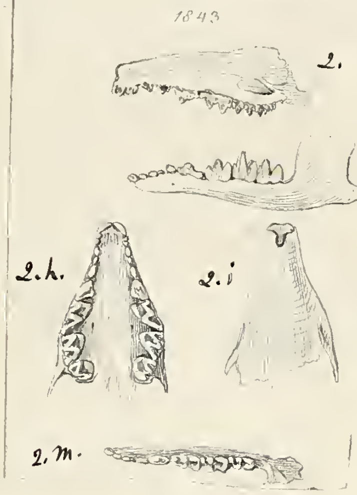
H. Richard del. R. Metzeroth sc.

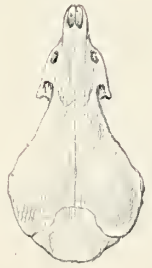
1276

XXVII
XXVIII

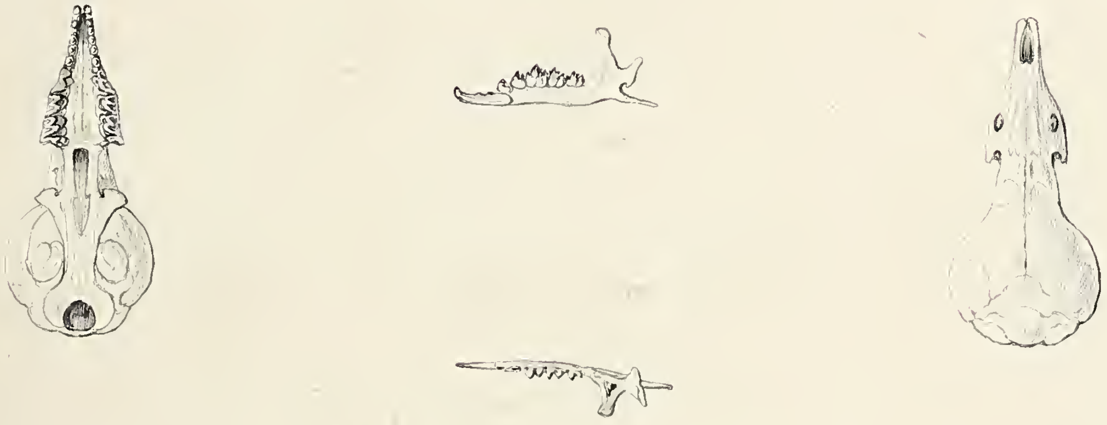
Figure 2



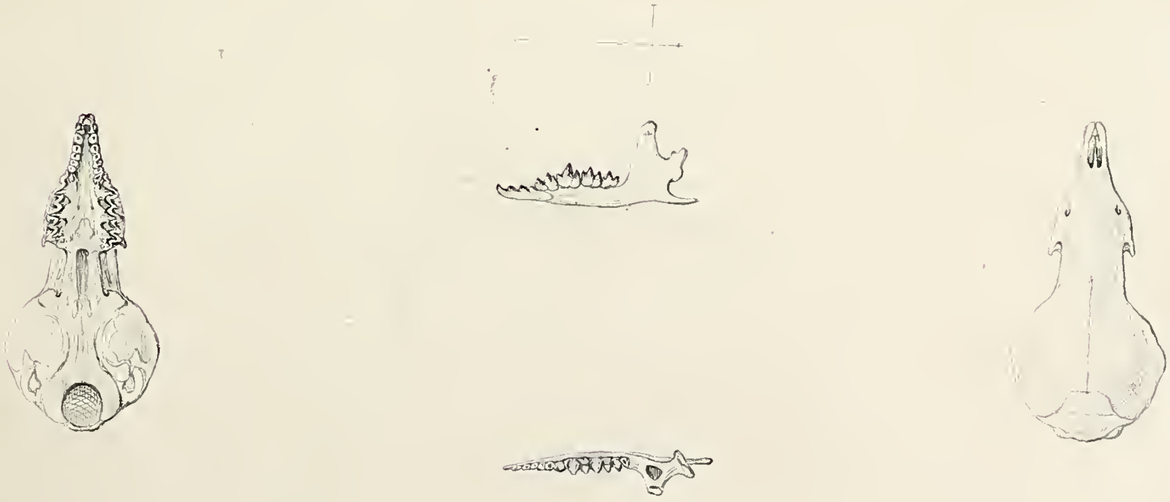




1276 Sorex suckleyi
Steilacoom



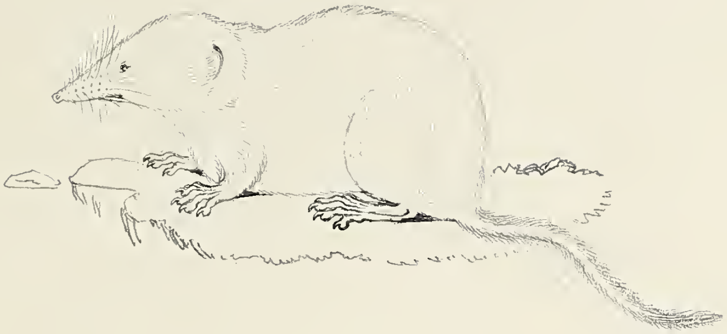
1788/127 Sorex navigator
Vancouver



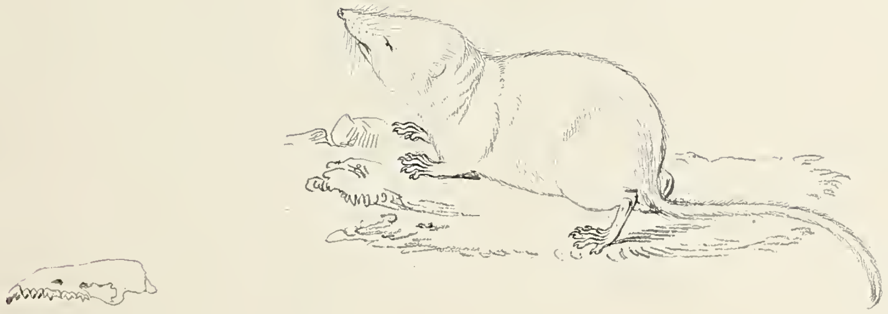
1777/172 Sorex pachyurus
Pembina

XXVIII

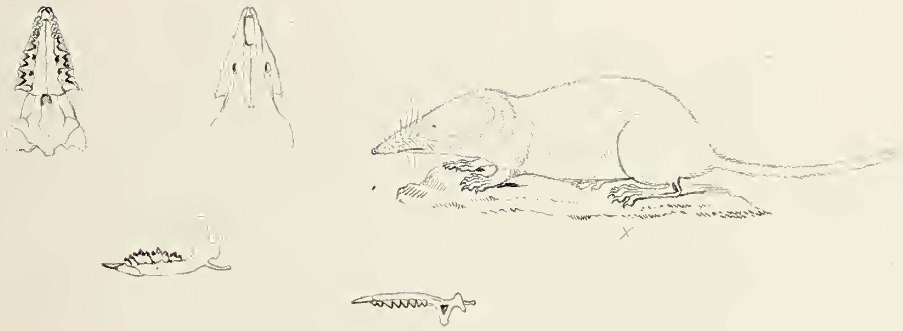
Sorex pachyurus Bd. 1674



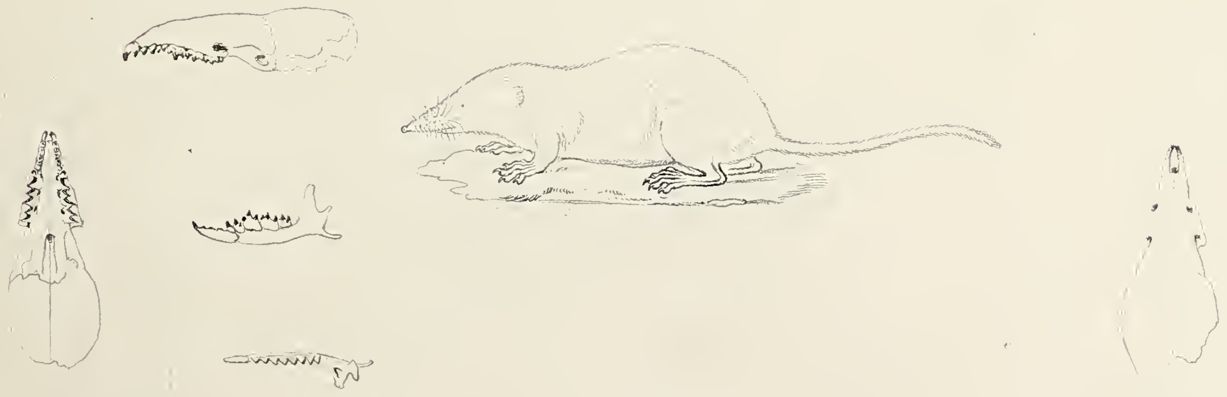
1677
Sorex Suckleyi

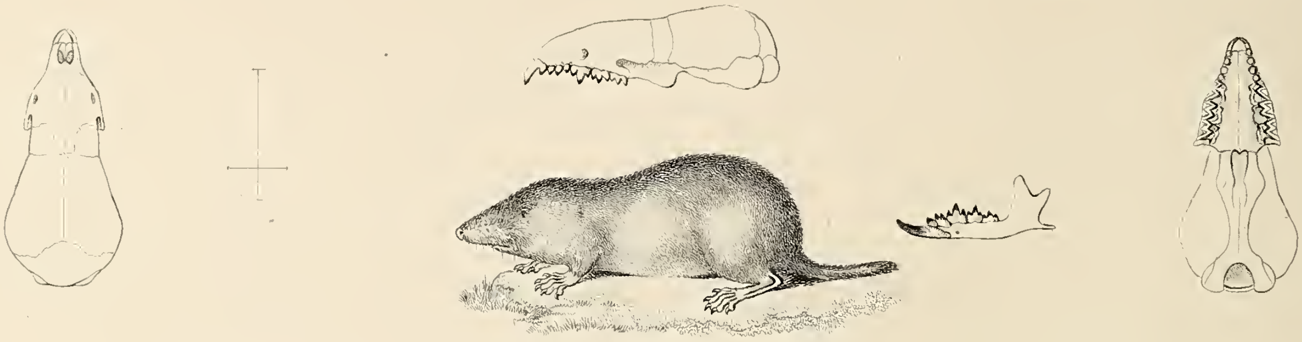


1686
Sorex thompsoni 5

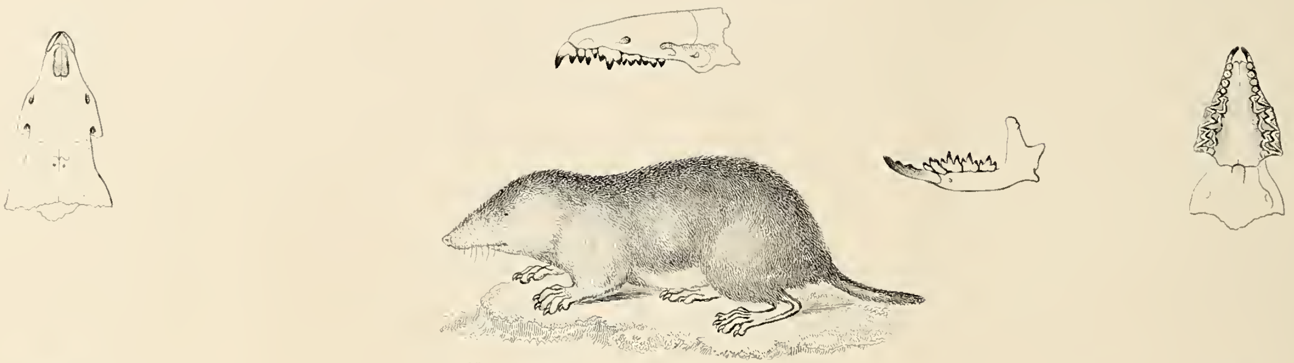


1685
Sorex haydeni 7

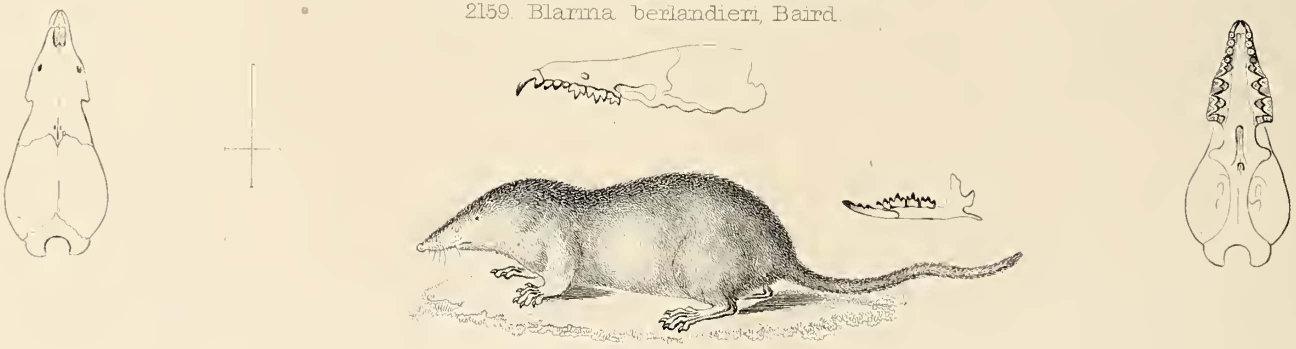




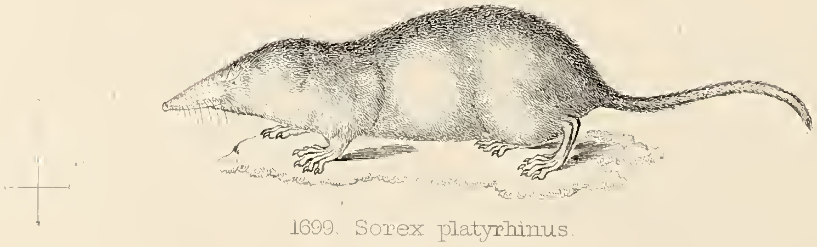
2157. Blarina exilipes, Baird.



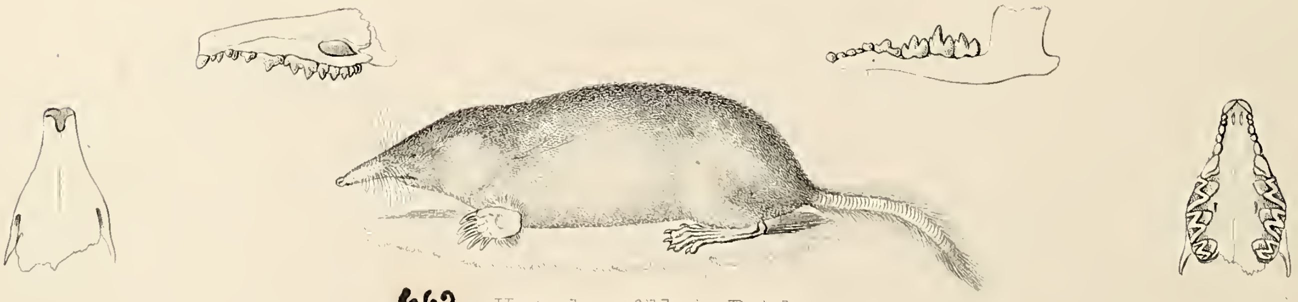
2159. Blarina berlandieri, Baird.



1688. Sorex hoyi, Baird.



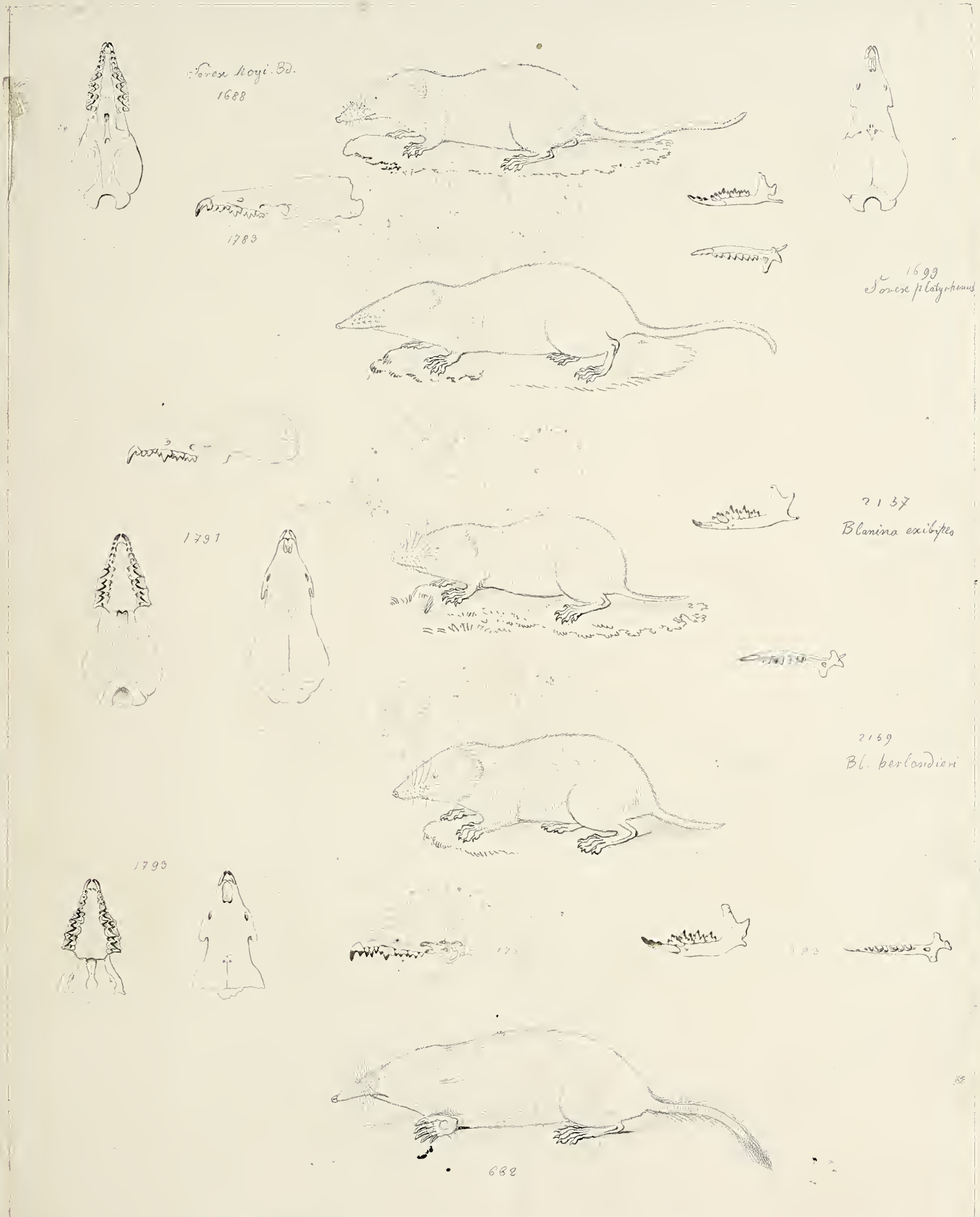
1699. Sorex platyrhinus.

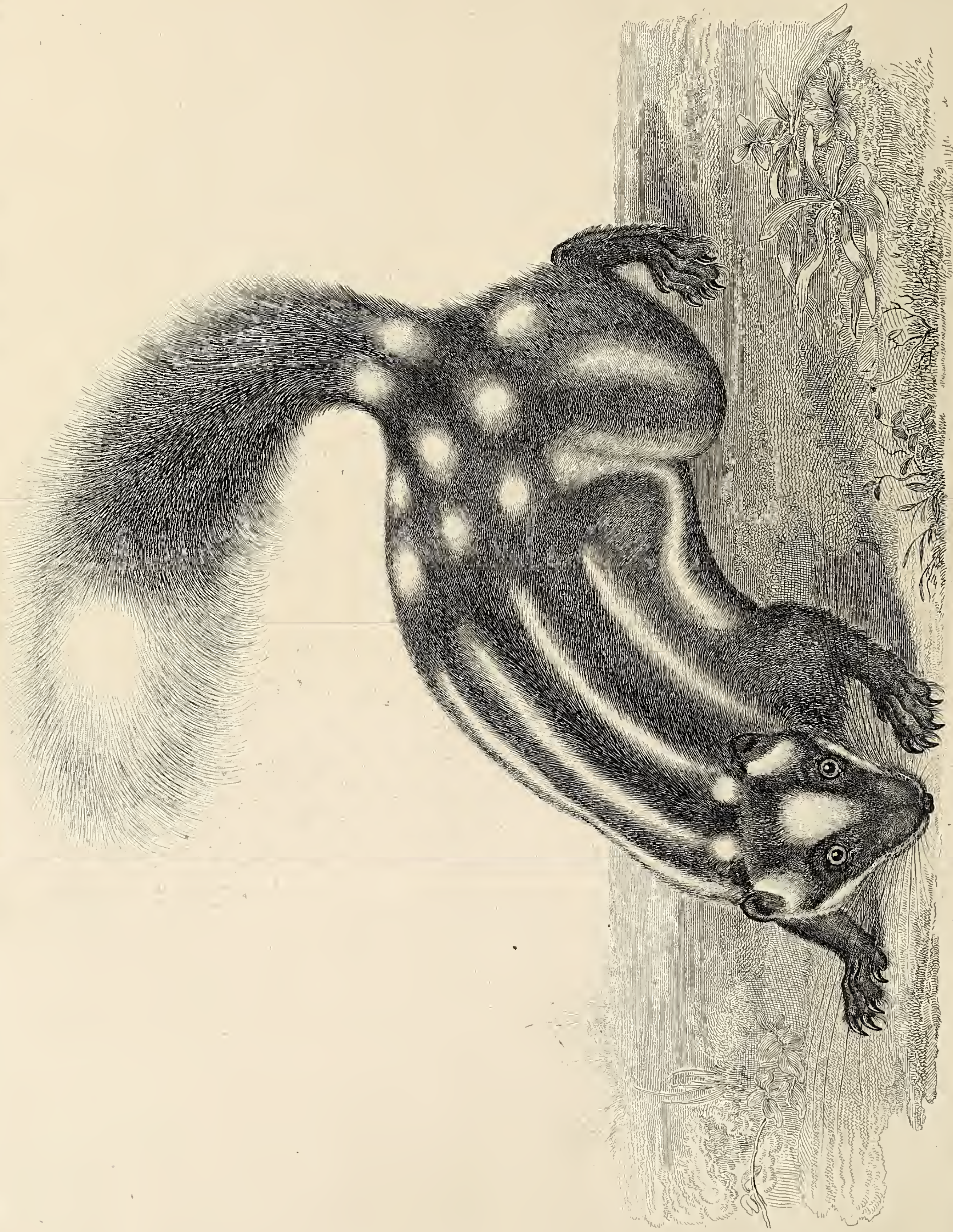


662 Urotrichus gibbsii, Baird.

J.H.Richard del. R. Metzeroth sc.

XXVIII


Sorex hoyi. Bd.
1688
1783
1699
Sorex platyrhinus
2157
Blarina exilipes
4
1791
2159
Bl. berlandieri
6
1793
662



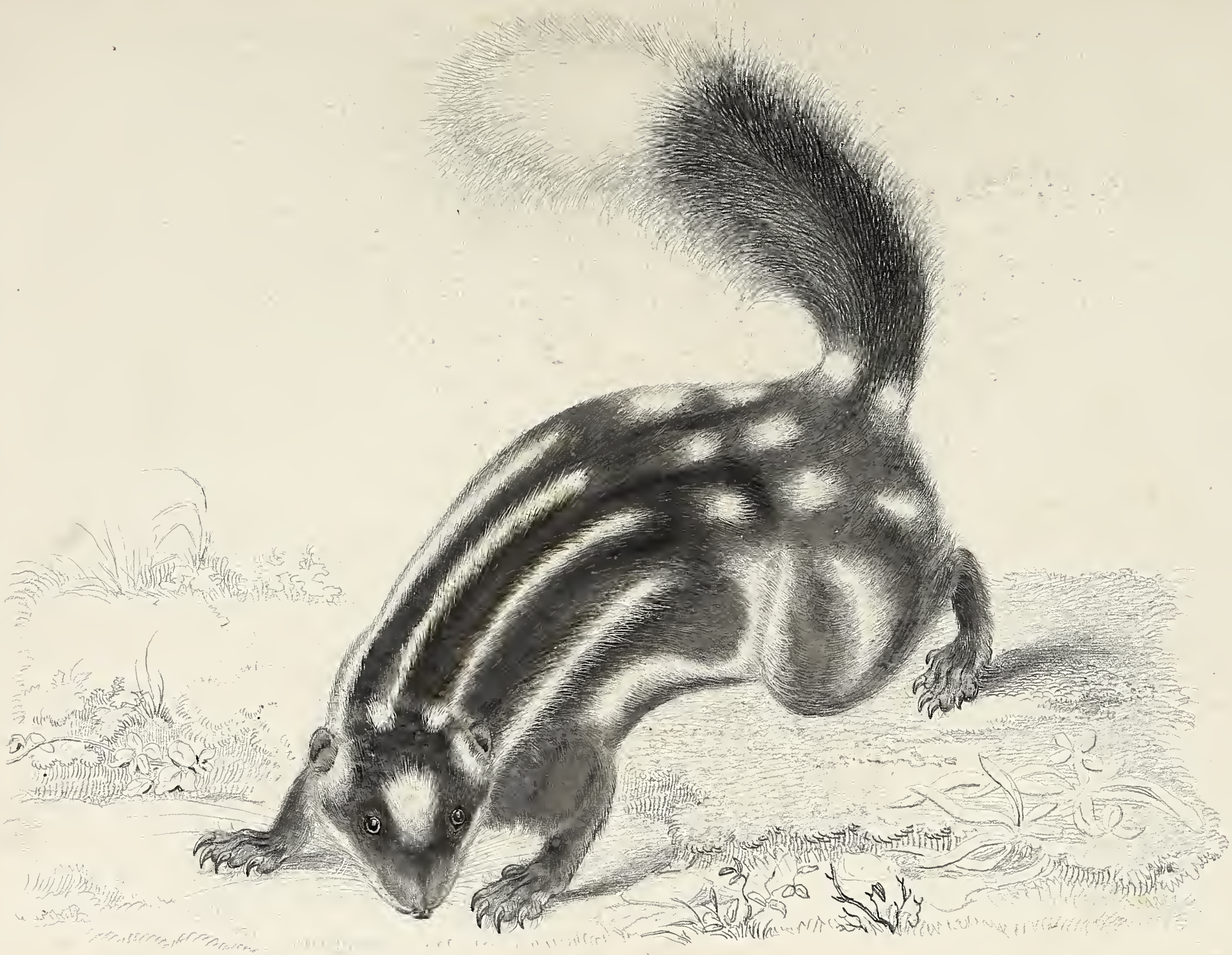
J. H. Richard del. R. Metzeroth sc.

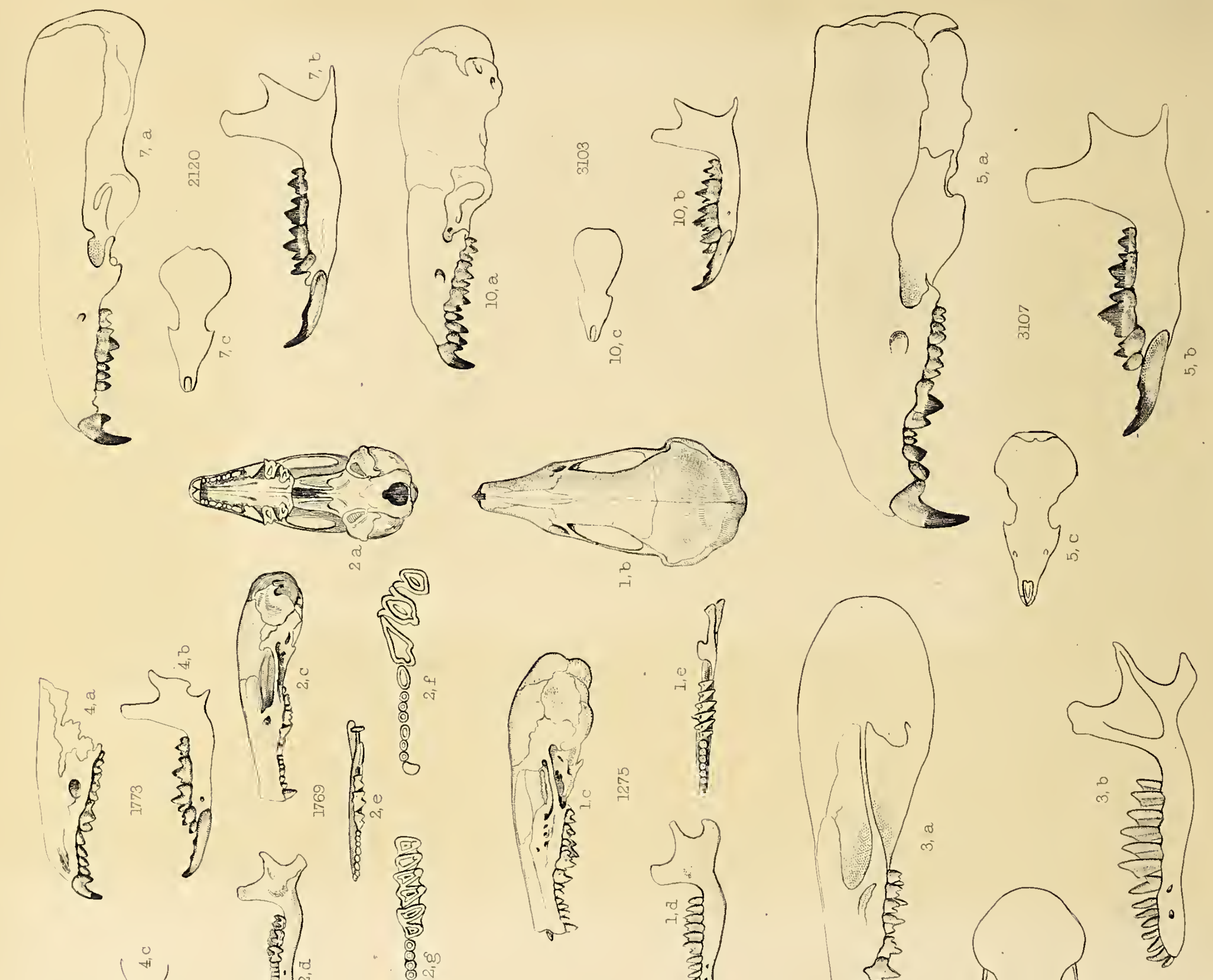
XVI

1188

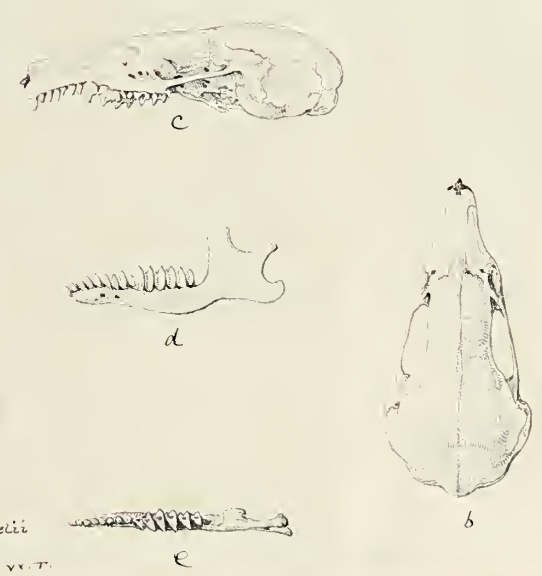
Cala. and Oregon.

Mammals. Pl. XXIX.





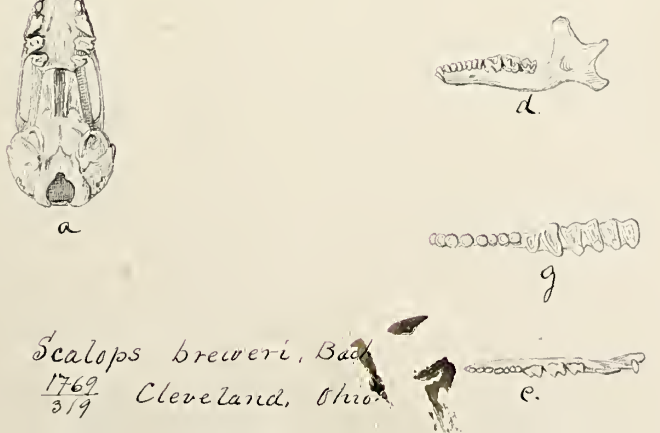
R. Metzeroth sc.



Scalops townsendii
1275/361 Steilacoom. W.T.

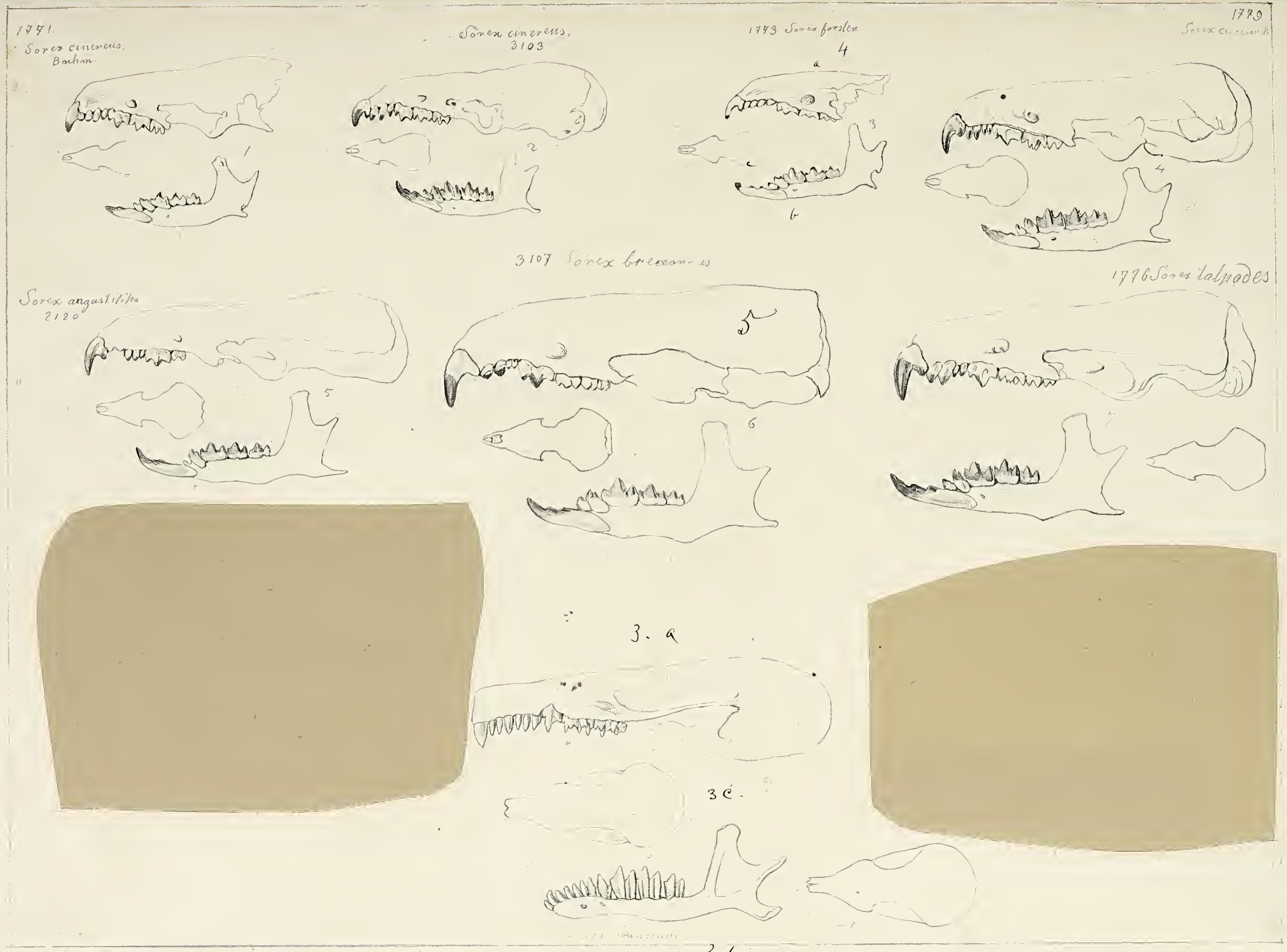
Fig. 2

1769



Scalops breweri, Bach.
1769/319 Cleveland, Ohio.

8
8
4
4
3
27

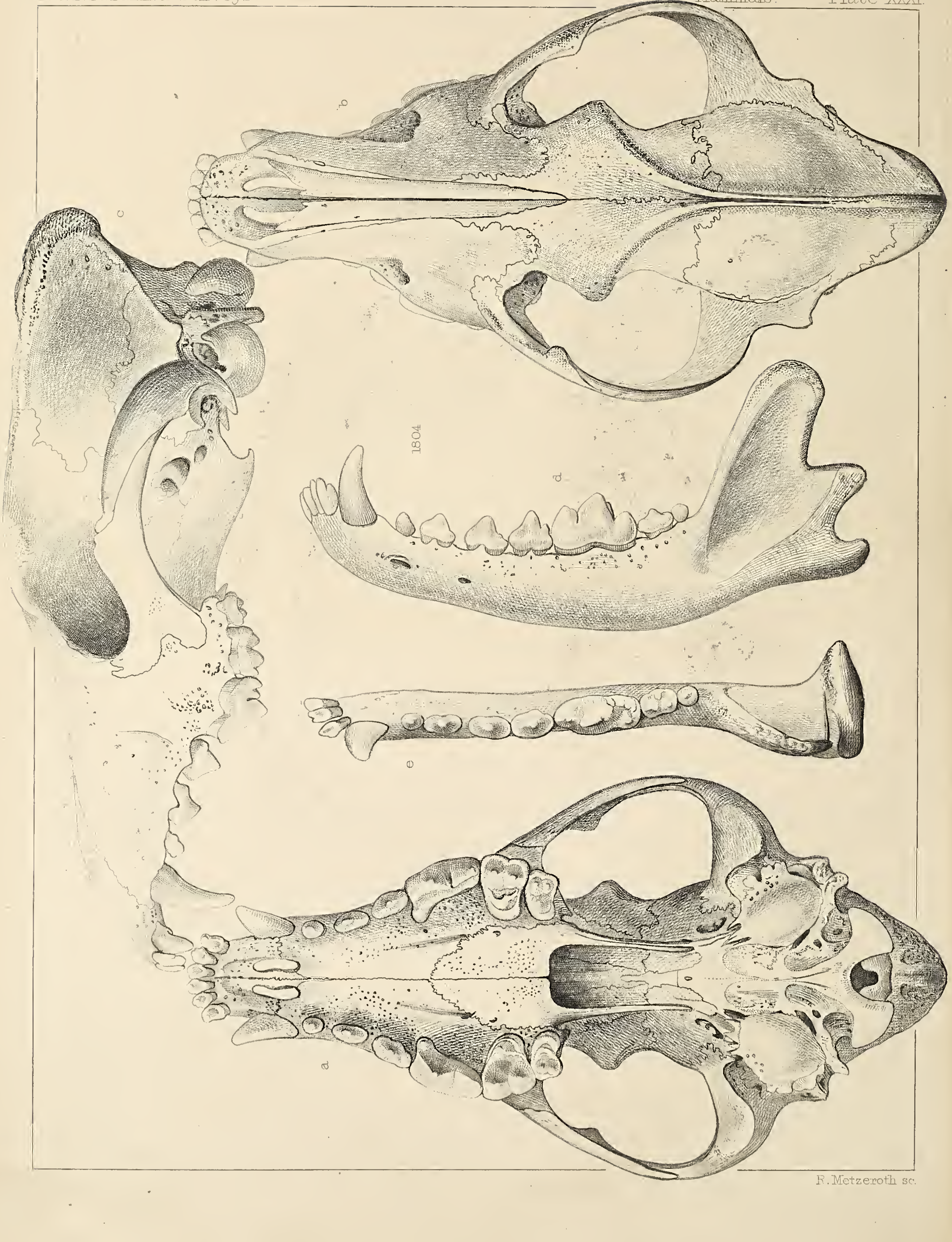


78

7

6.

3 b



F. Metzeroth sc.

Two to be placed together
make these like original.

Mammals - Plate XXXI

1804
b

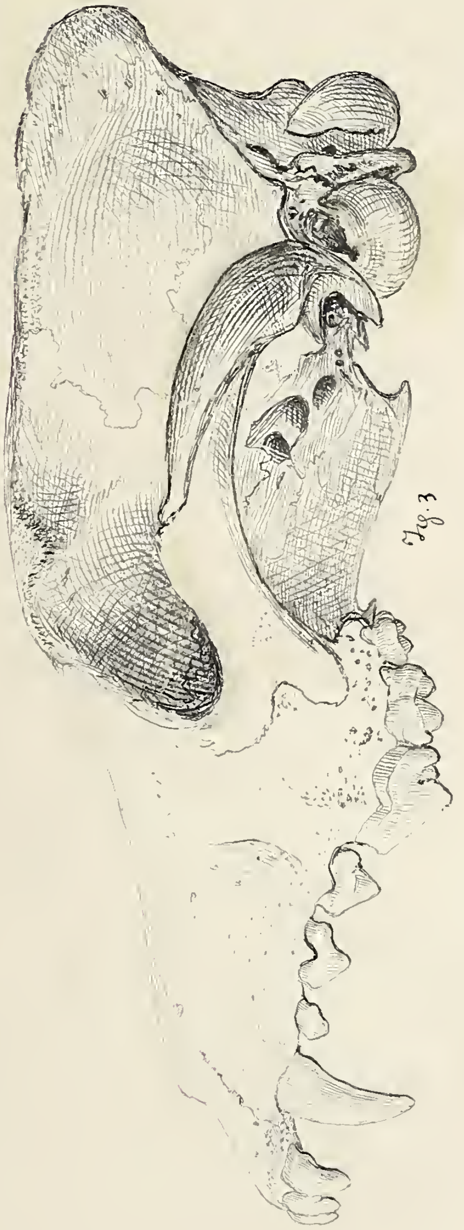


Fig. 3

2/3

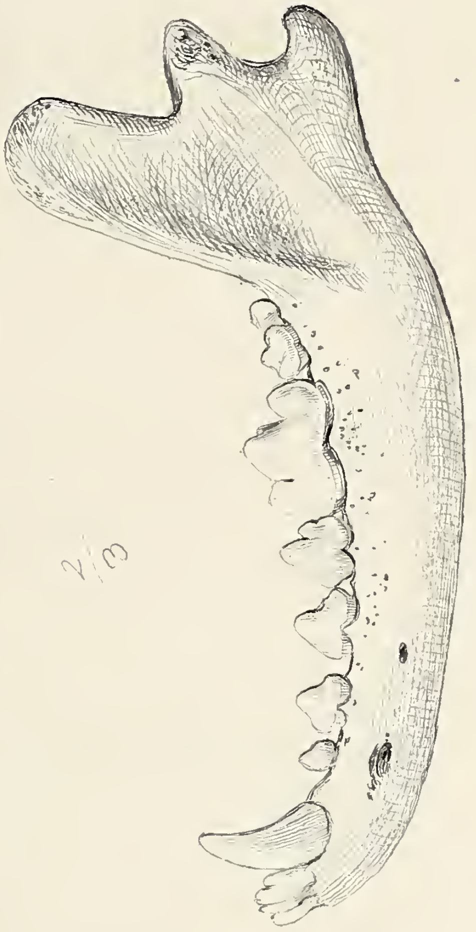


Fig. 4

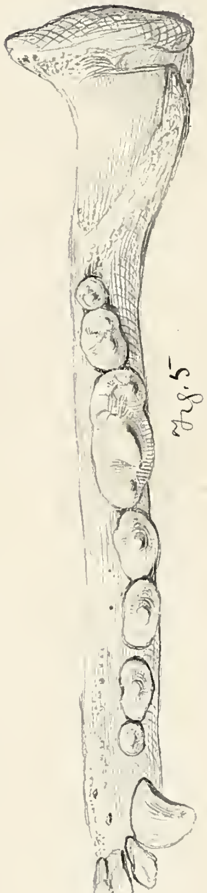


Fig. 5

Lupus
1814 Adirondacs. N.Y.

Two to be placed together

Mammals. Plate XXXI

1804 a

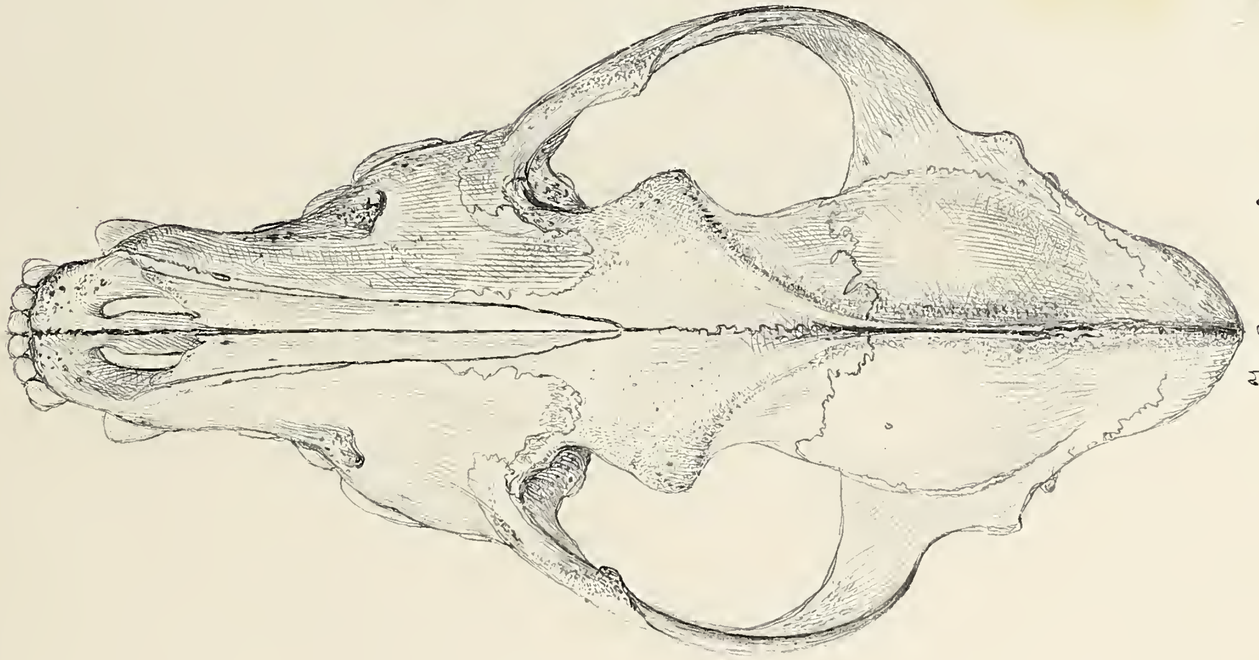


Fig. 2

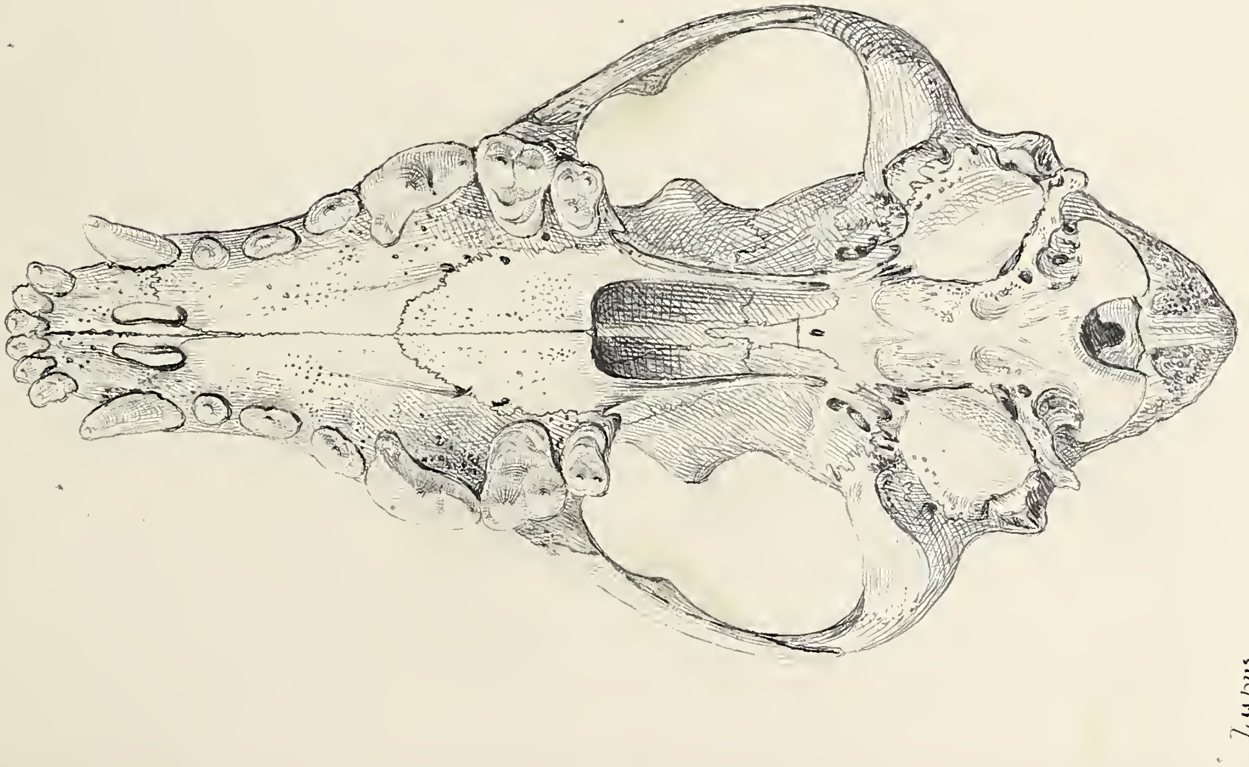
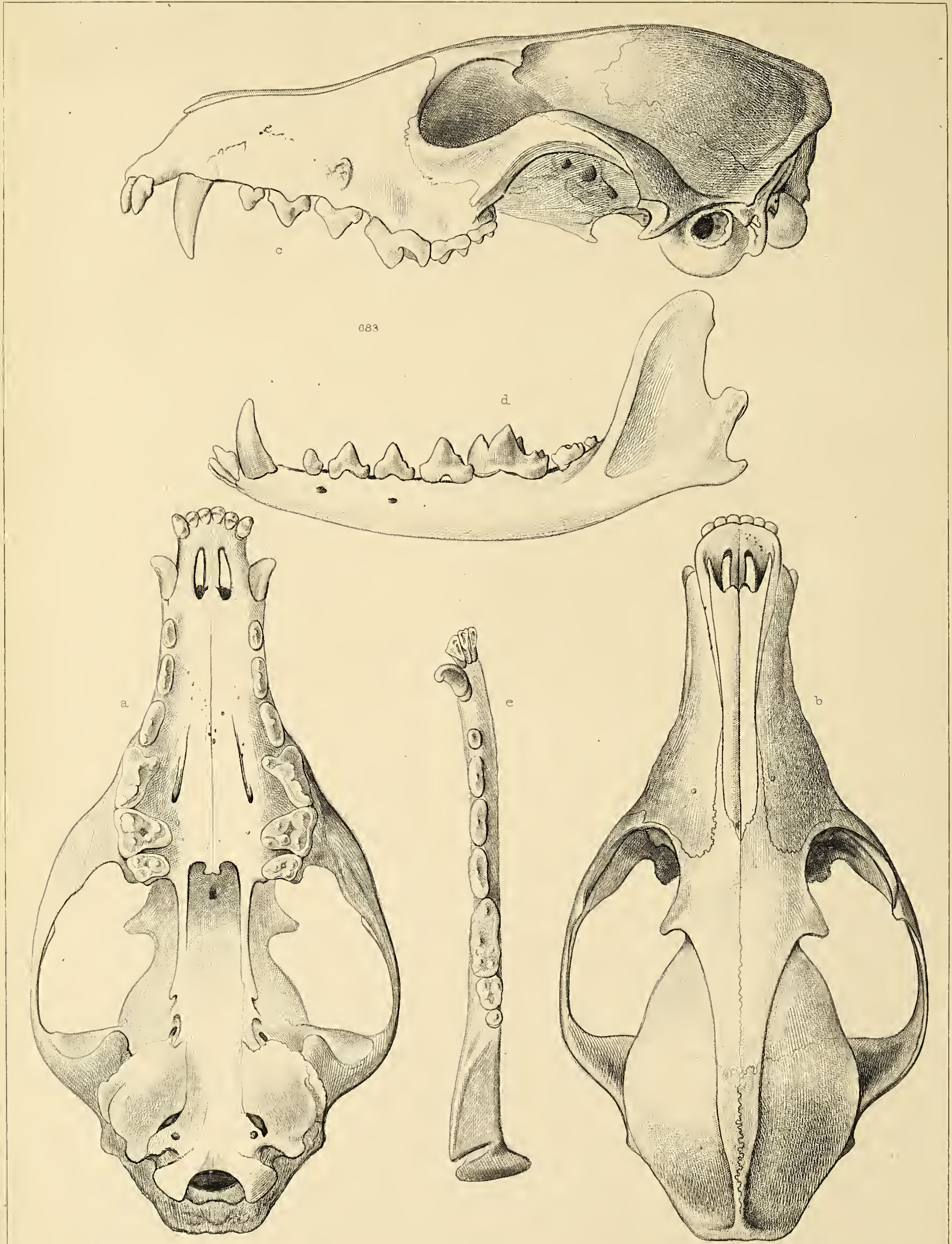


Fig 1

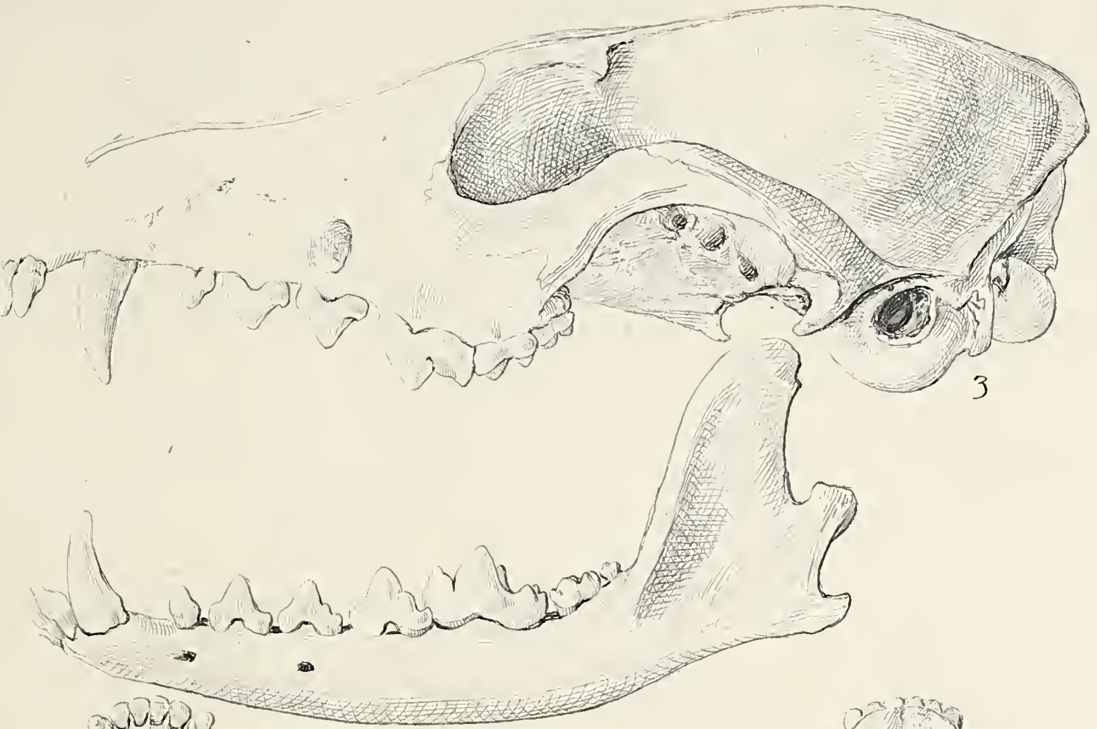
Lupus
1804
Adirondacks, N.Y



R. Metzeroth fec.

XXXII

(83)



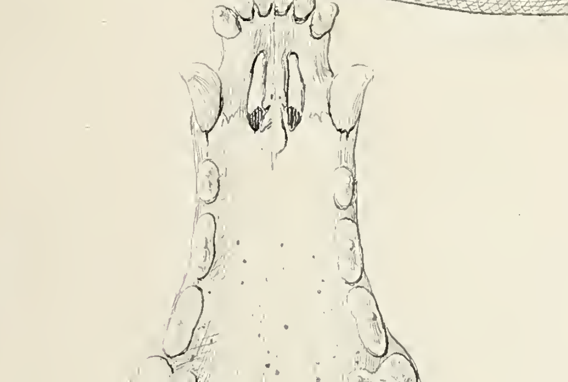
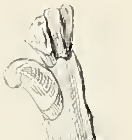


Fig 1


5

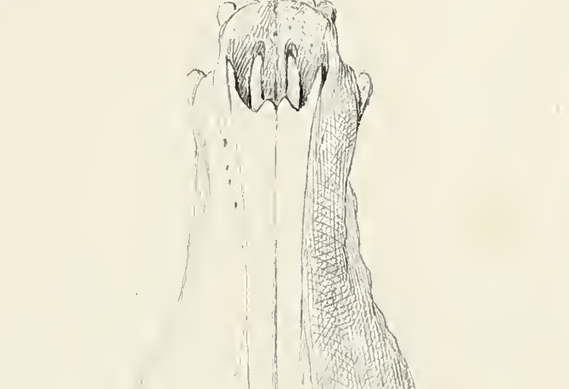
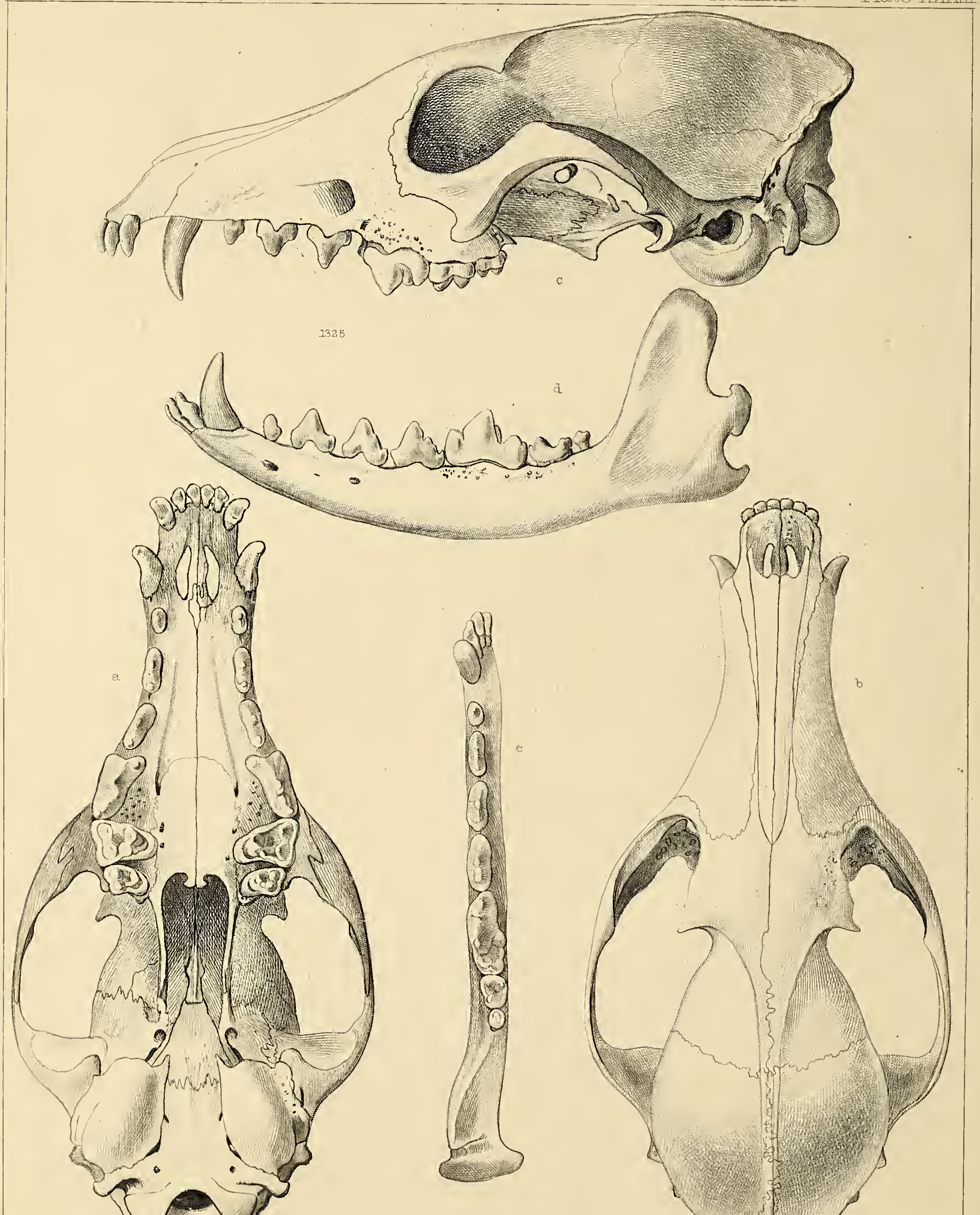


Fig. 2

Vulpes fulvus, e
683, old ♂. Carlisle

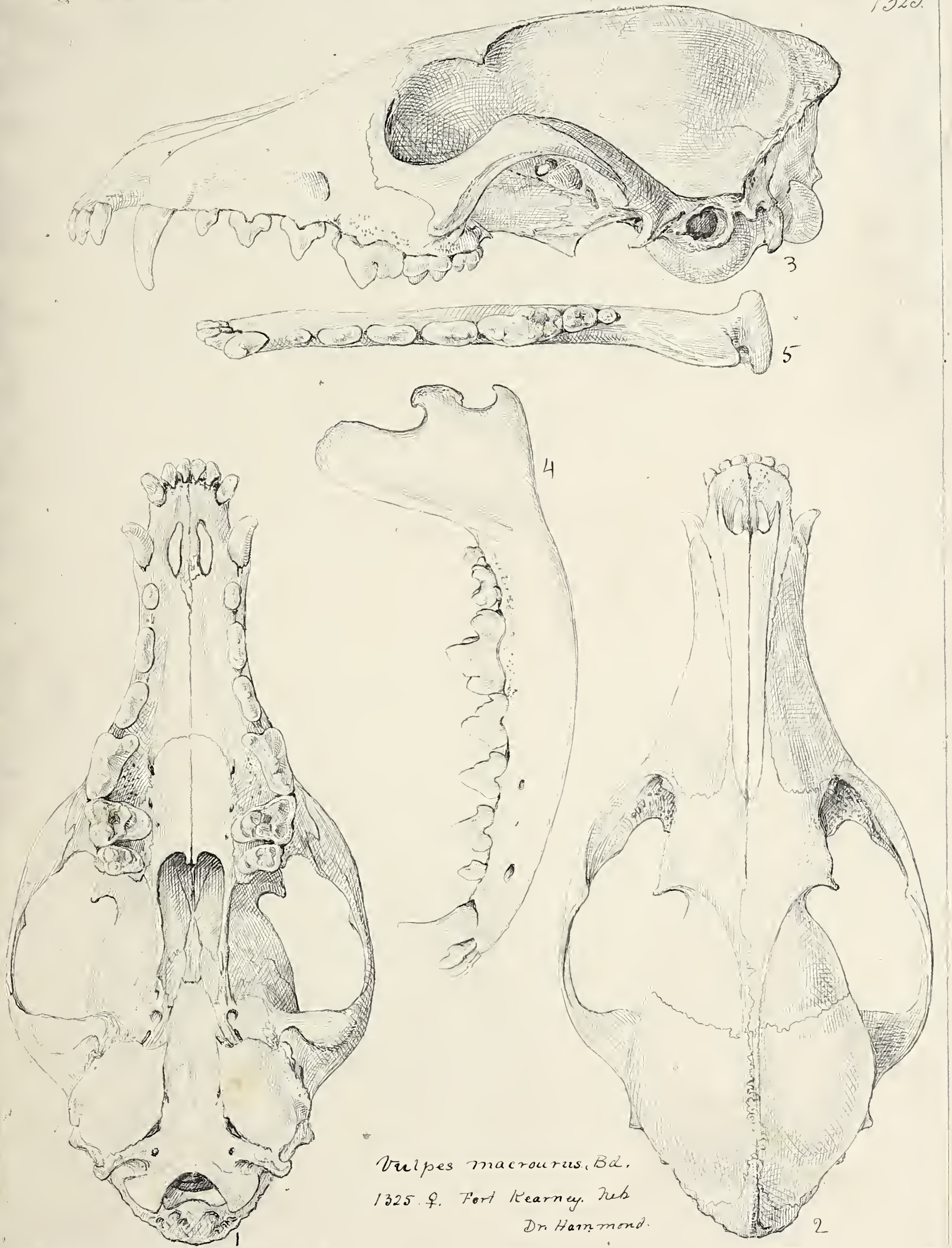
J. H. Richard & R. Metzeroth



R. Metzeroth fec.

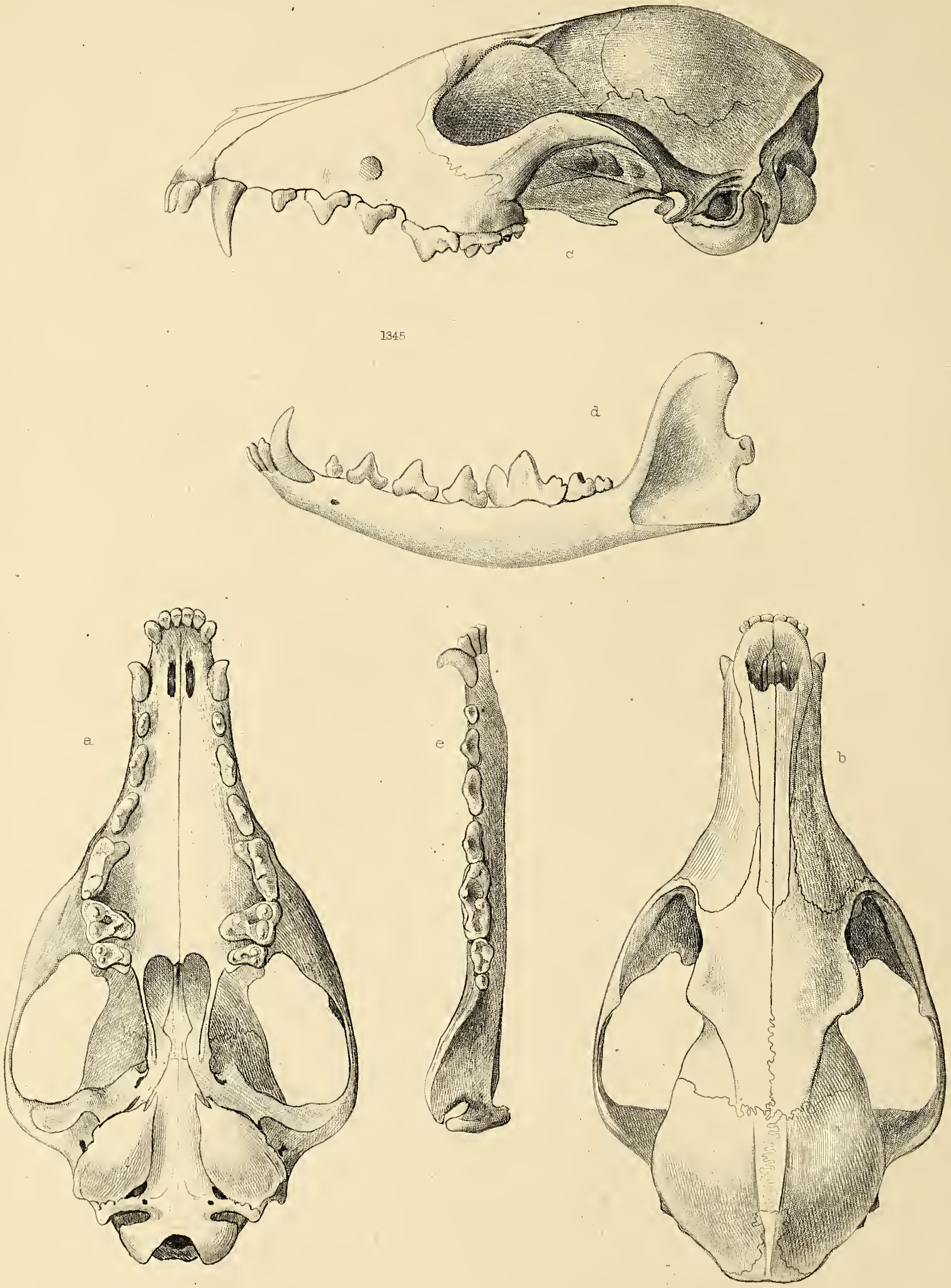
XXXIII

1325



Vulpes macrourus, Bd.
1325. ♀. Fort Kearney. Neb
Dr. Hammond.

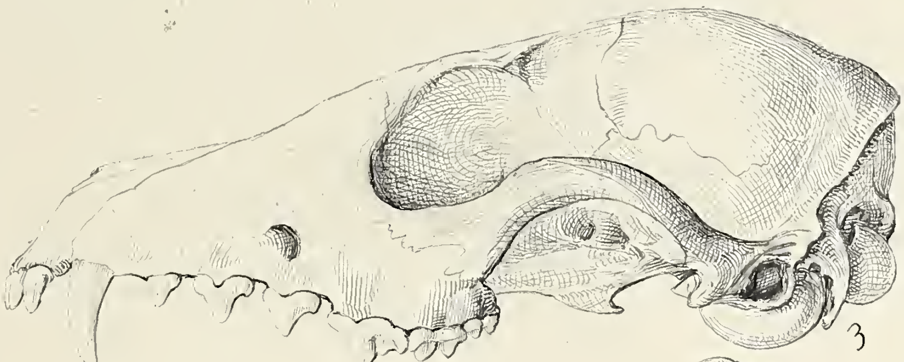
J. H. Richard & R. Metzeroth. 1855.

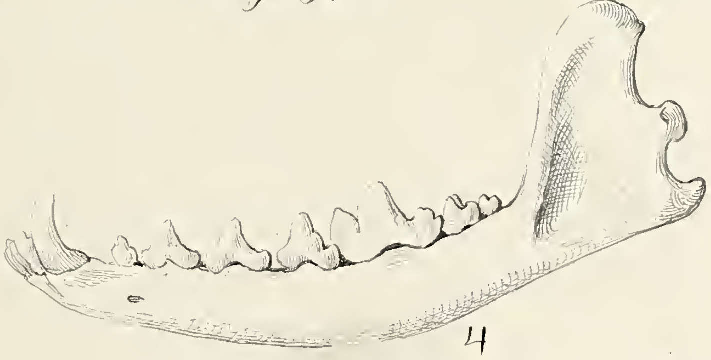


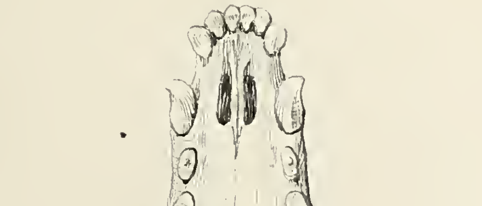
R. Metzeroth fec.

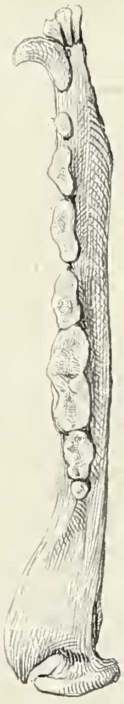
XXXIV

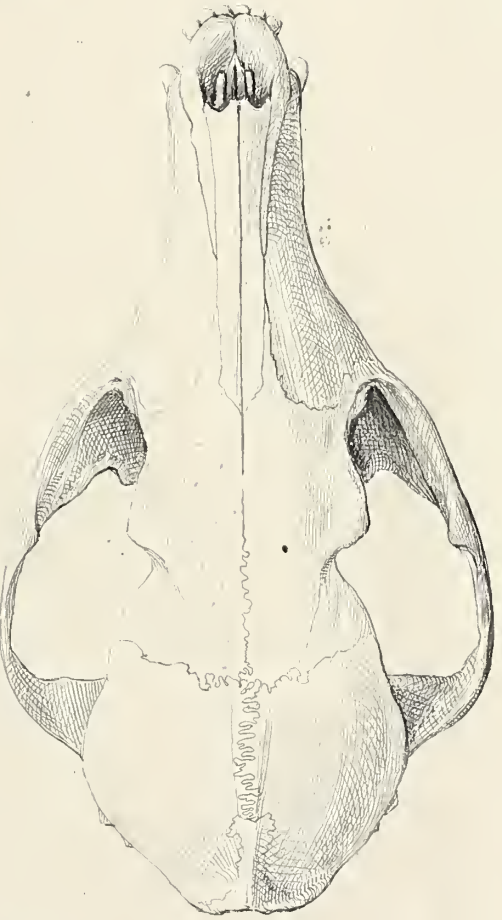
1345.


3


4

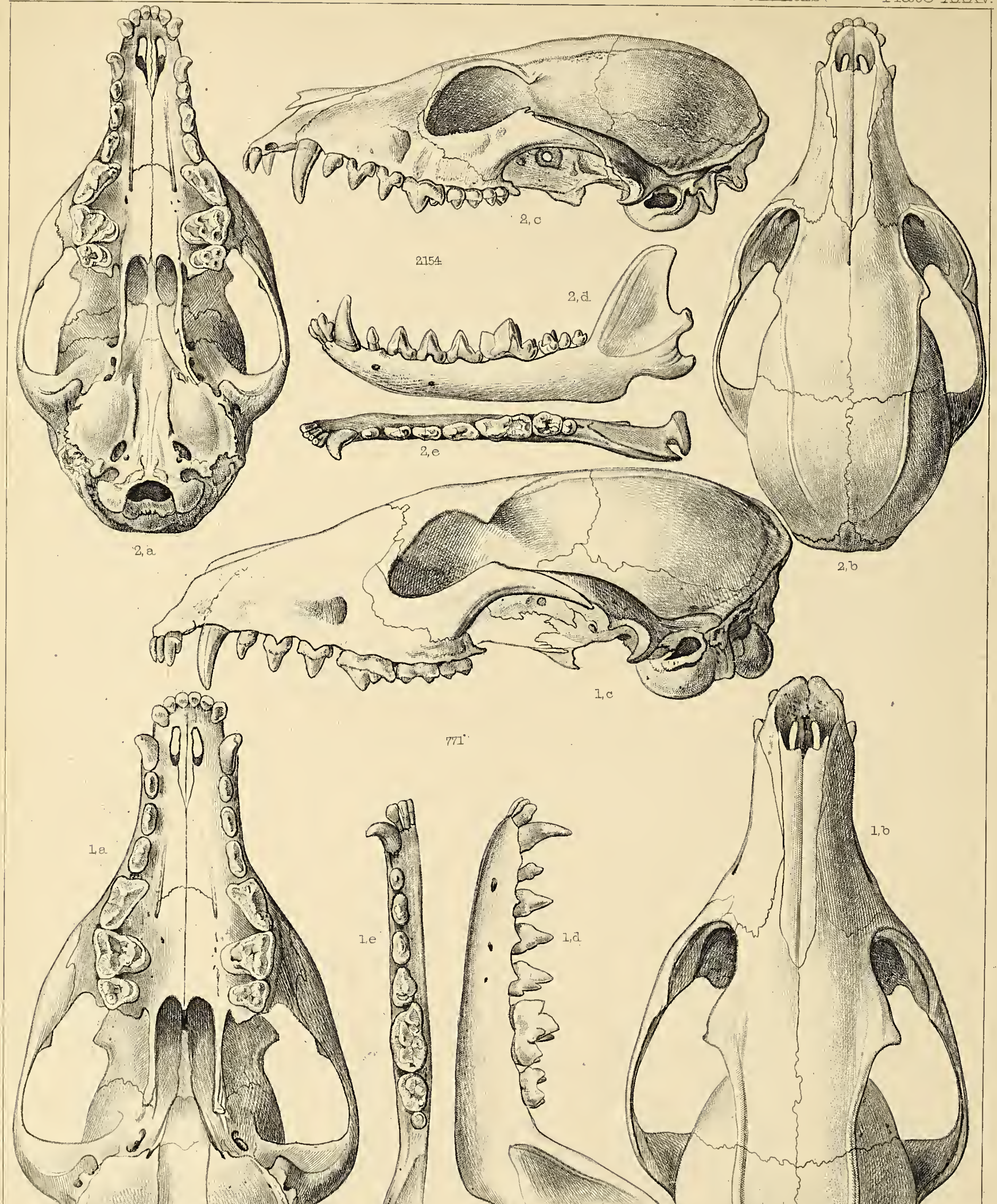

1


5


2

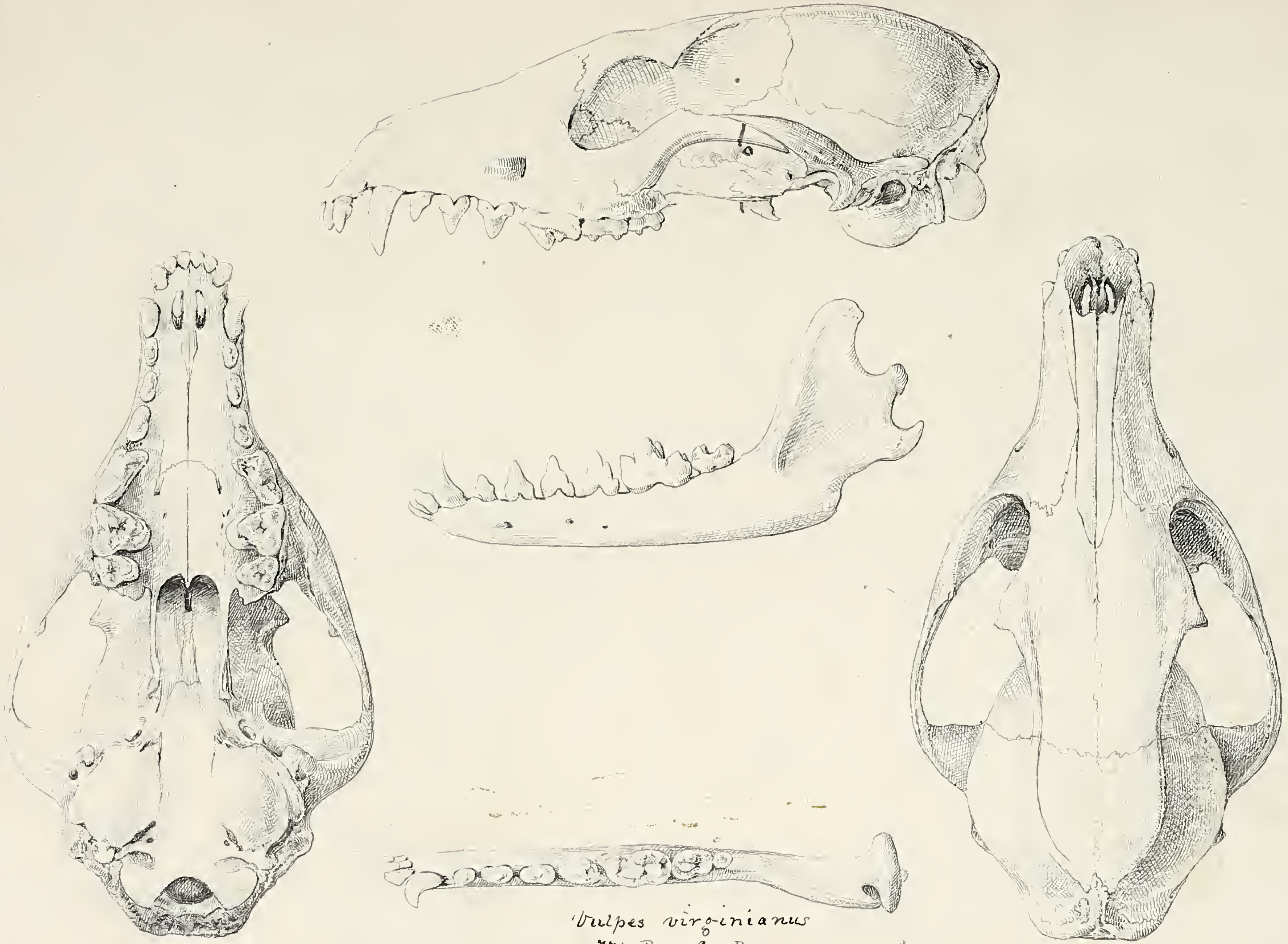
Vulpes velox, Say
1345. Ft. Kearney, Neb.
Dr. Hammond

J H Richard & ? Metzeroth 1855



R. Metzeroth fec.

771

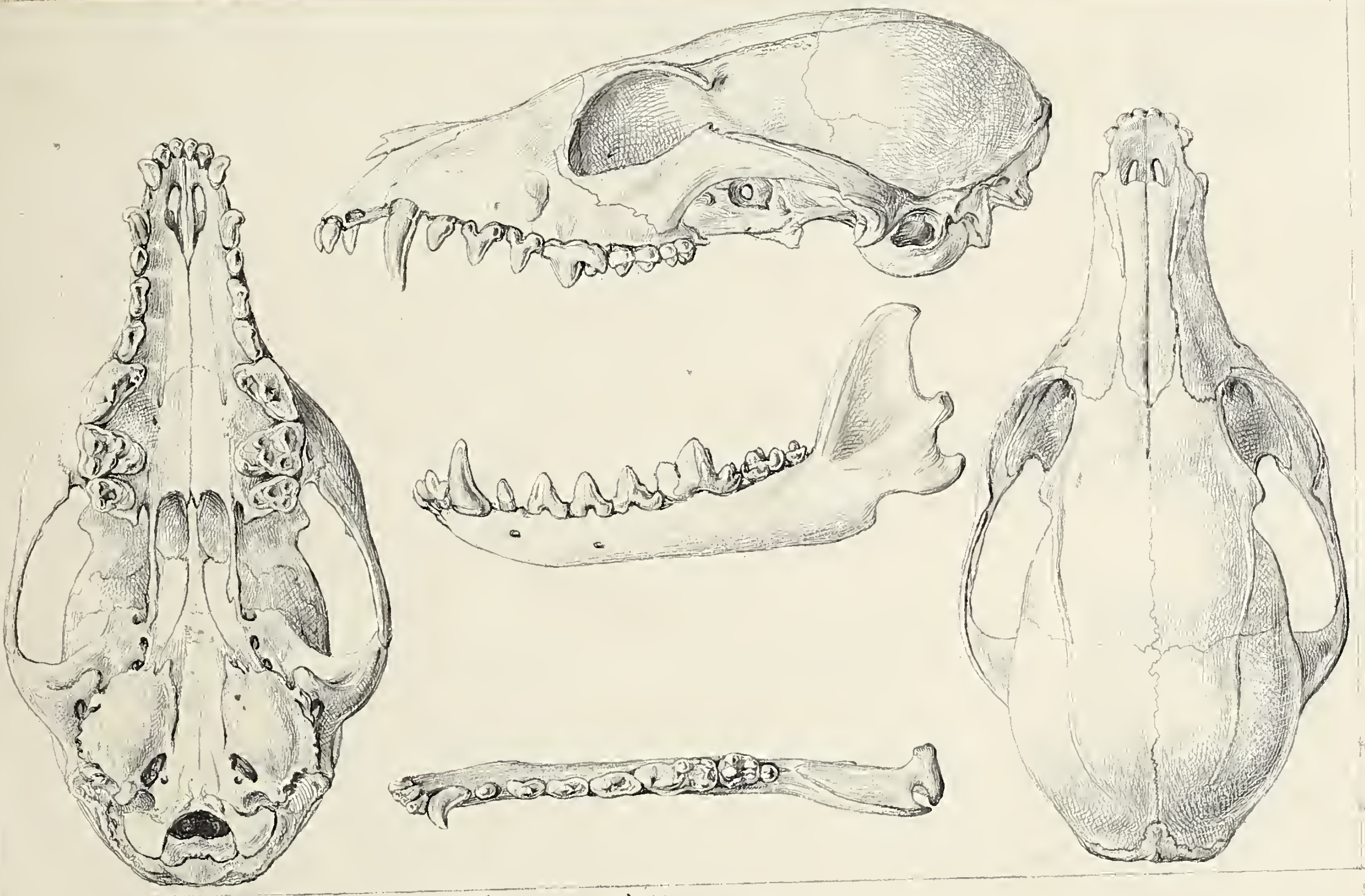


Vulpes virginianus
771, Perry Co, Pa.

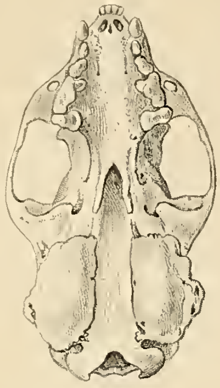
J. H. Richard & R Metzeroth 1853

XXXV

2154

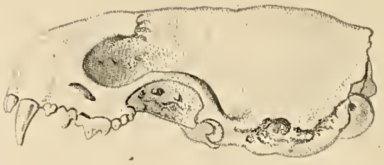


2154/1351 Vulpes littoralis
San Miguel, Cal.

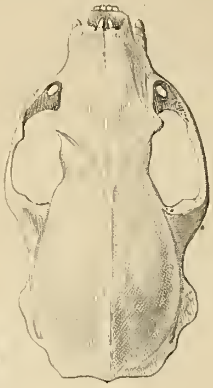


3, a

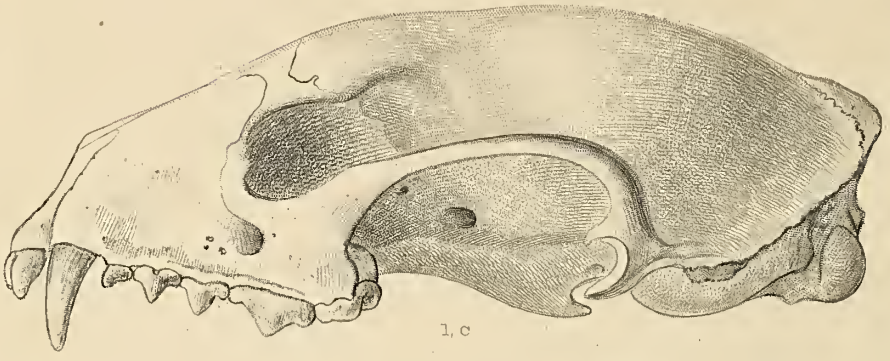
3, c



624

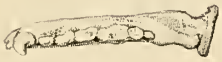


3, b

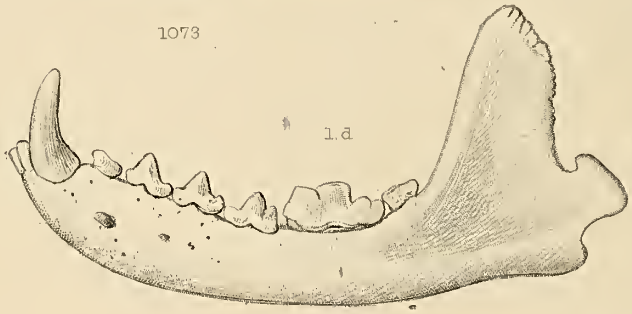


1, c

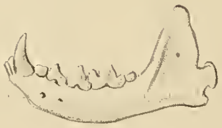
1073



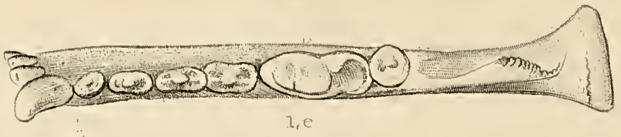
3, e



1, d

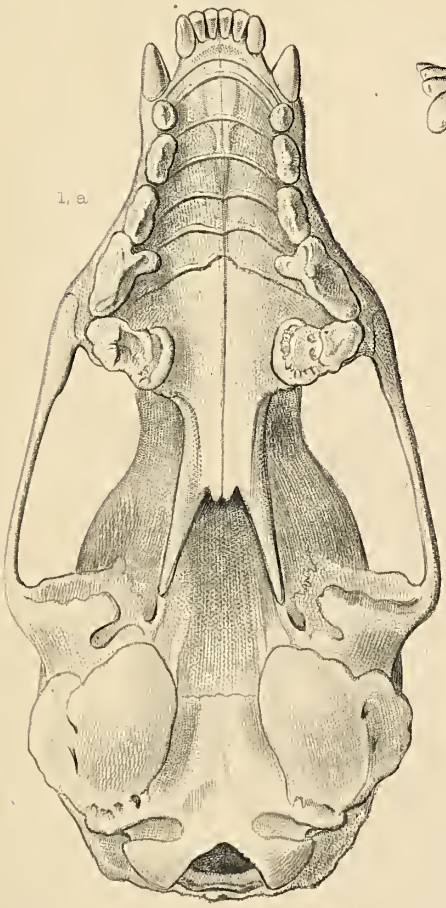


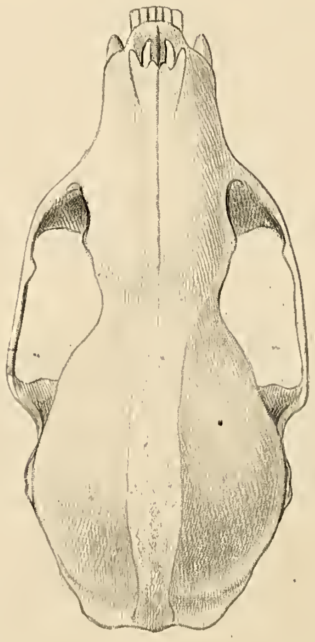
3, d



1, e

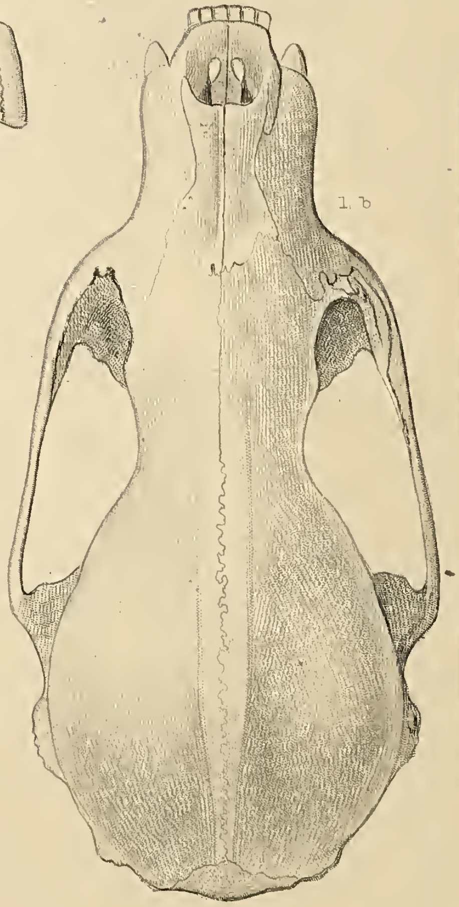
1, a





2
1668

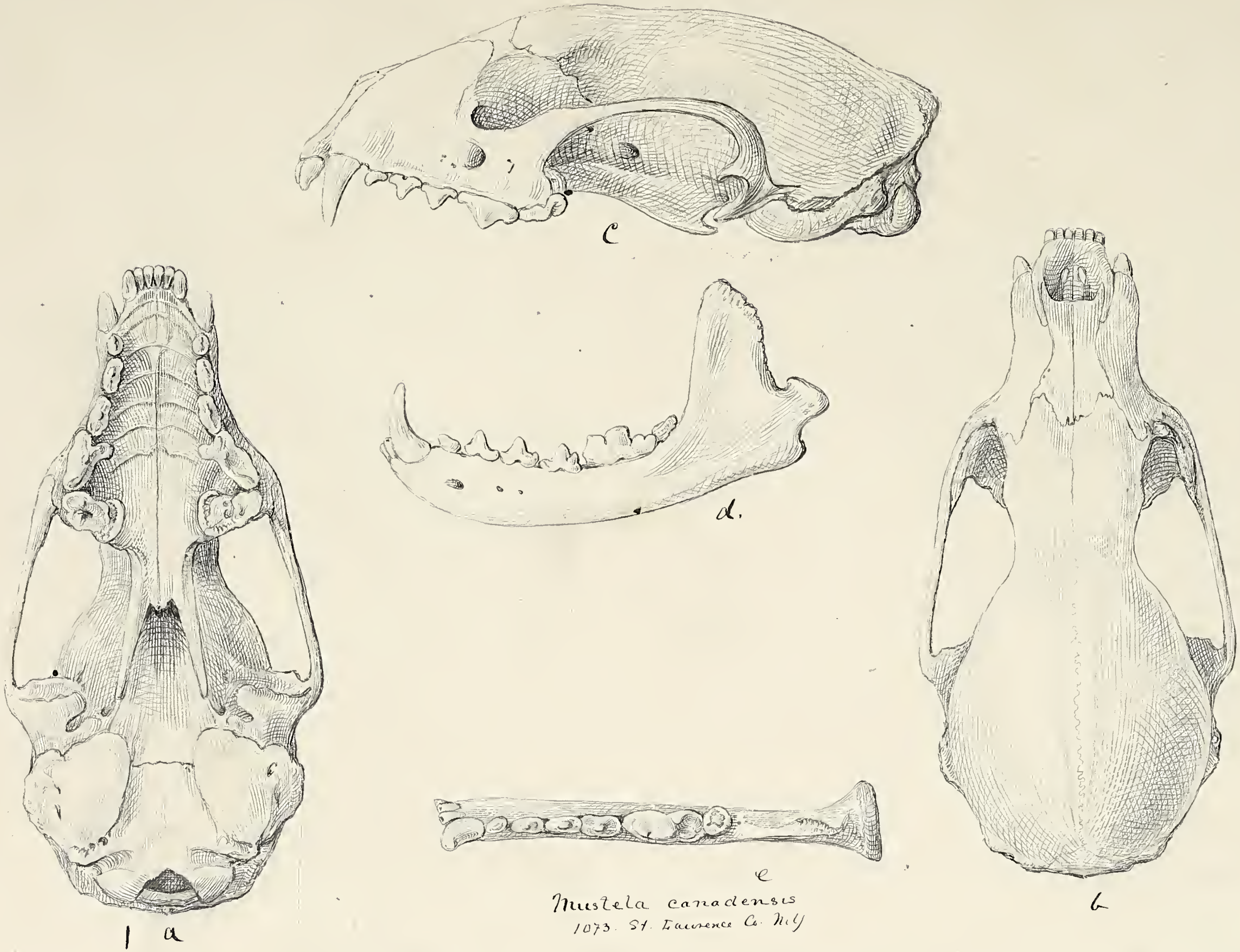
1, b



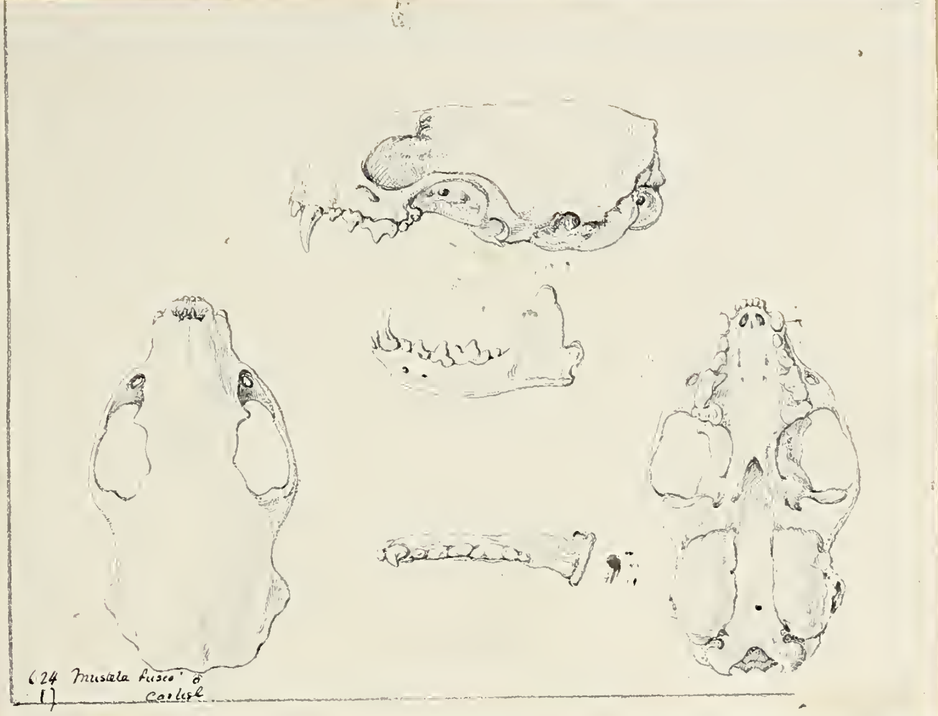
R. Metzeroth fec.

1073

XXXVI

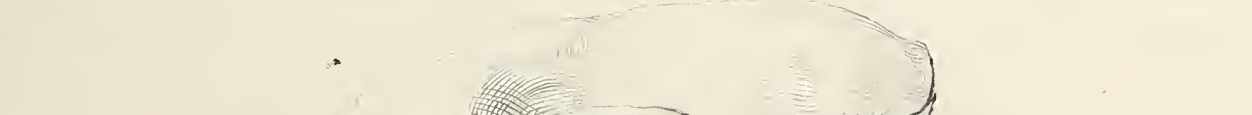


Mustela canadensis
1073. St. Lawrence Co. N.Y.



624 Mustela fusca ♂
[illegible] Carlisle

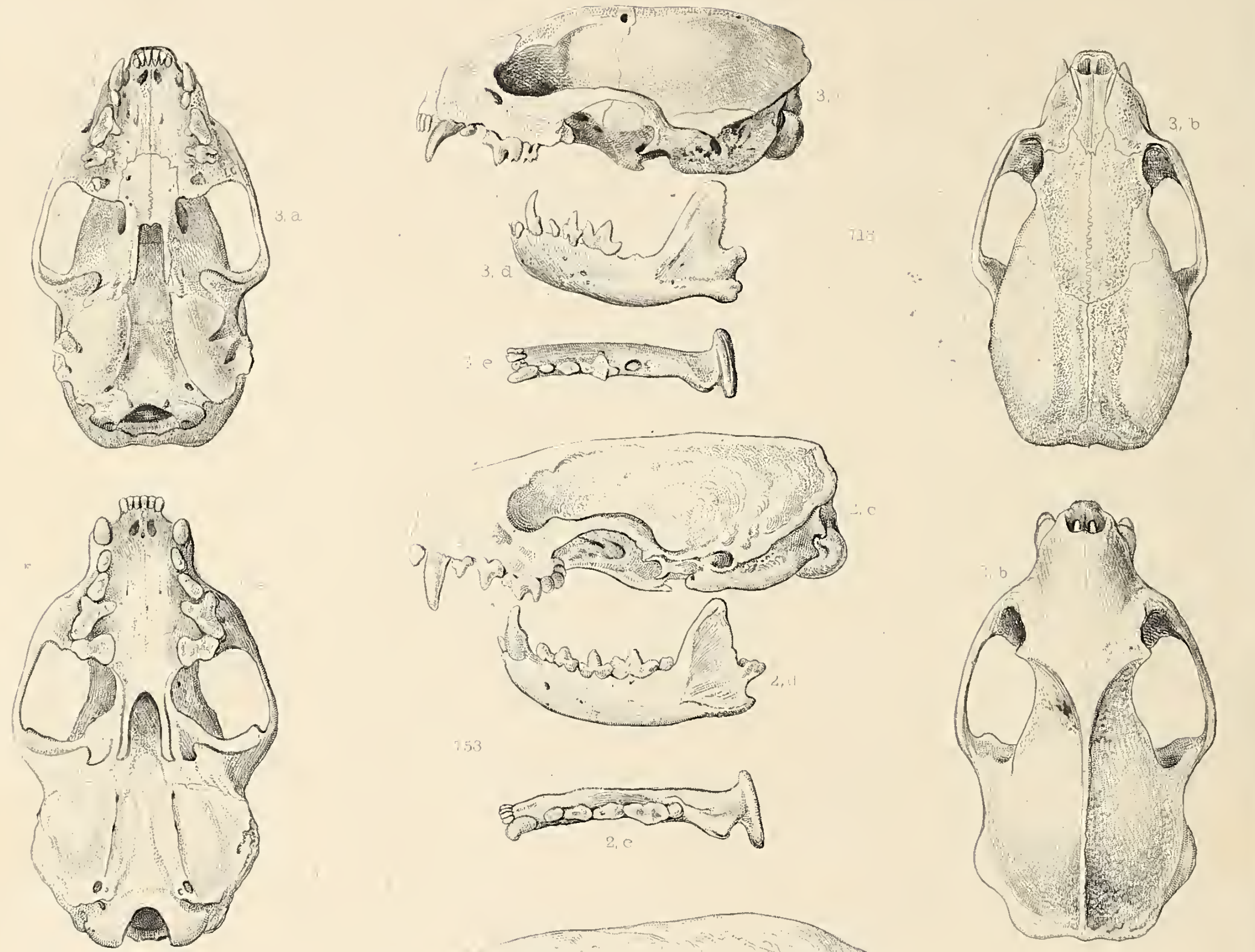
1668



Mustela huro
$\frac{1668}{549}$ ♂. Essex Co. N.Y.

Jy. 7

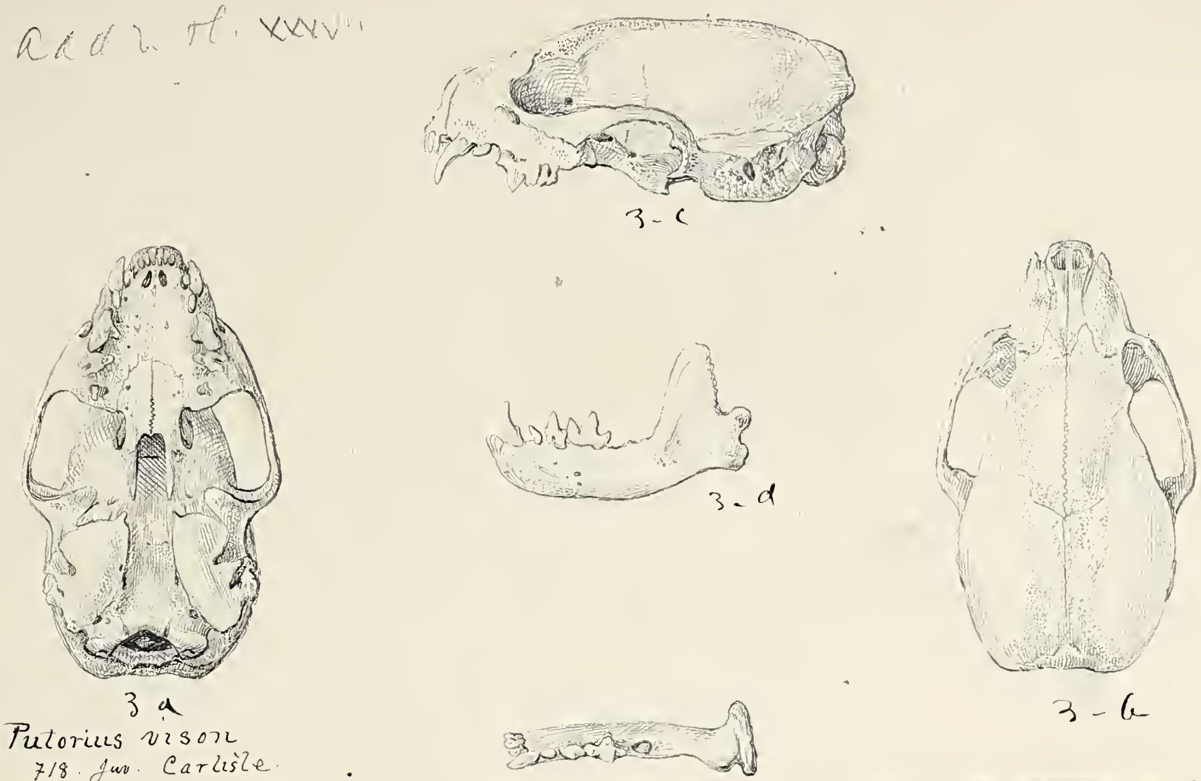
LXXVI



R. Metzcroth sc.

XXXVII

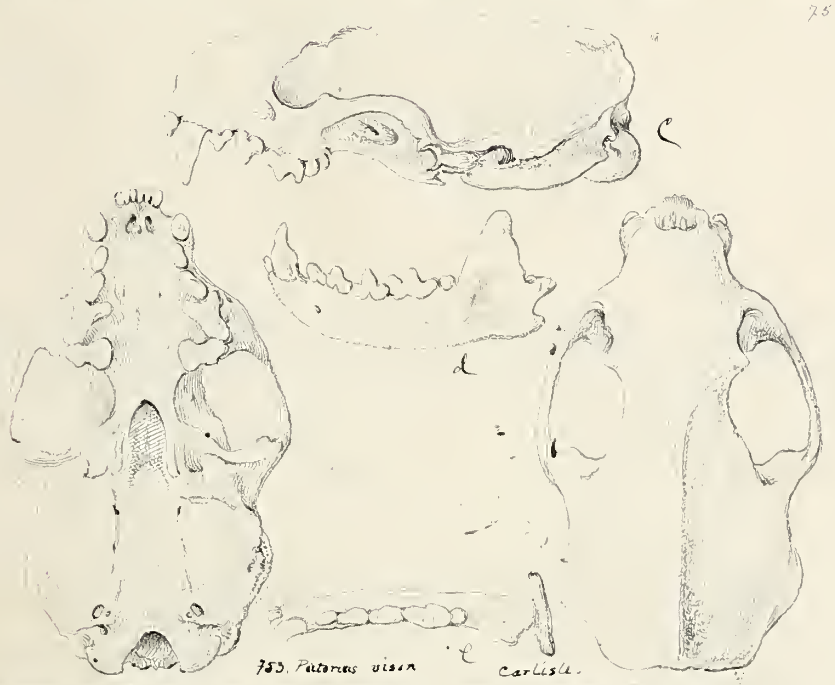
Addl. Pl. XXXVII



Putorius vison
718. Juv. Carlisle

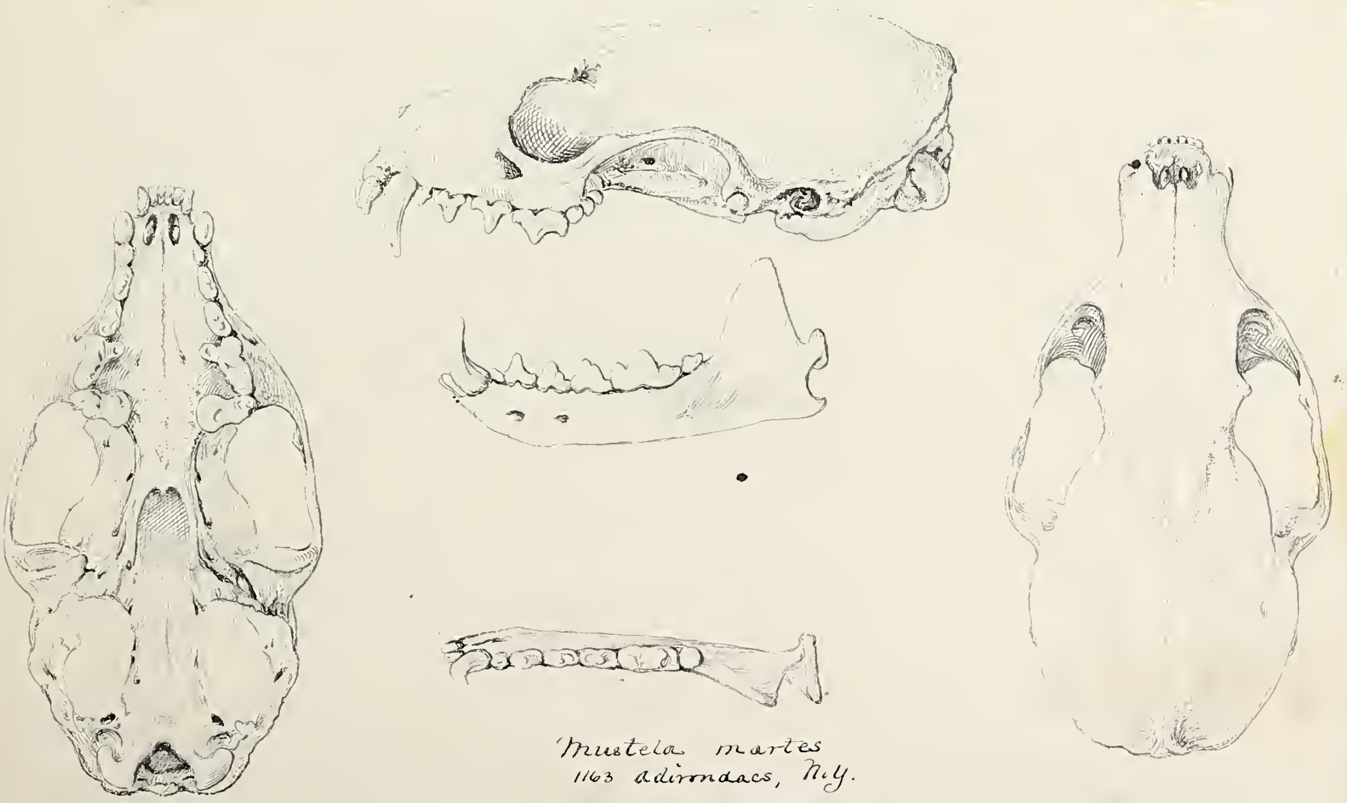
XXXVII

753.

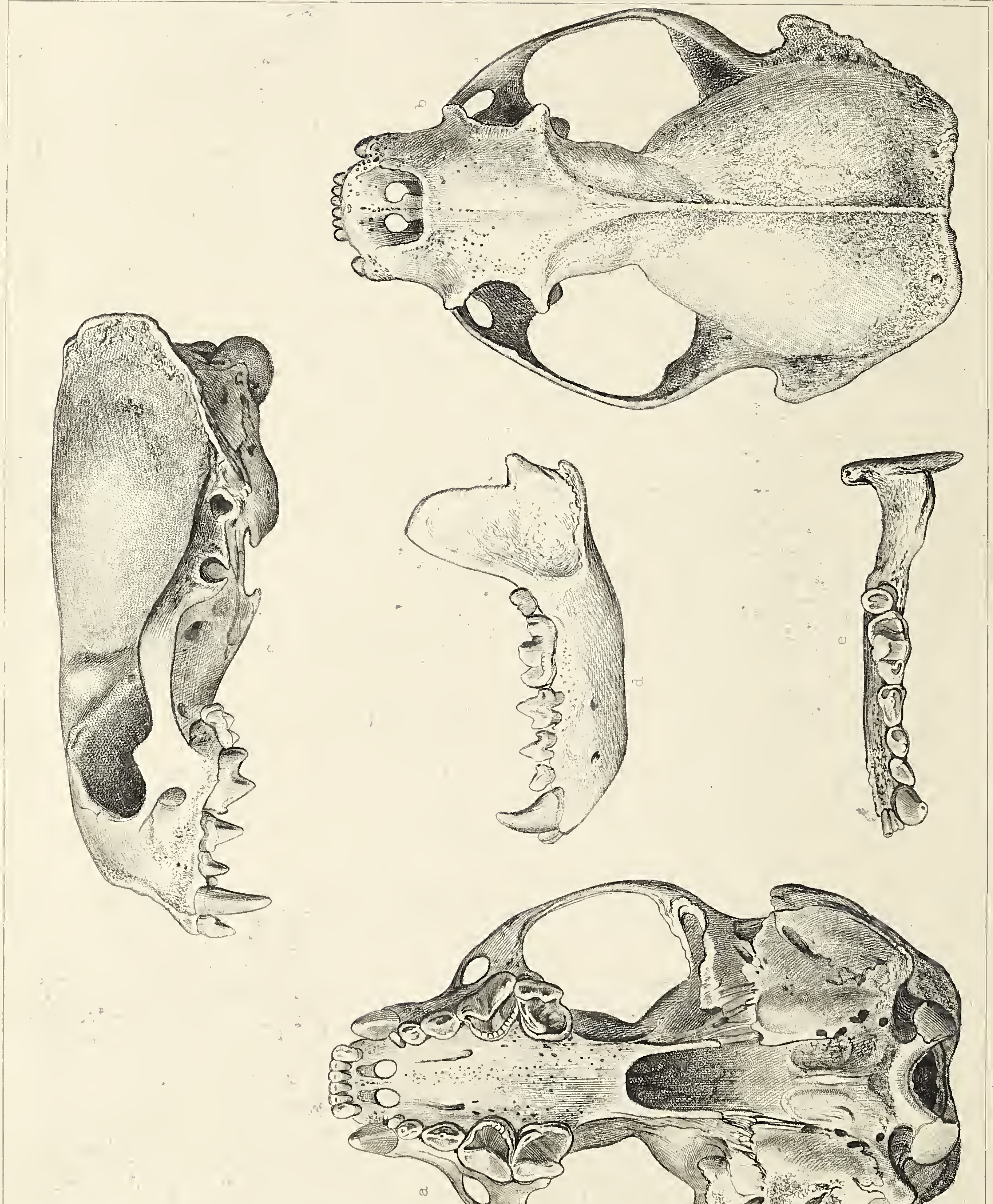


753. Putorius vison Carlisle.

1163

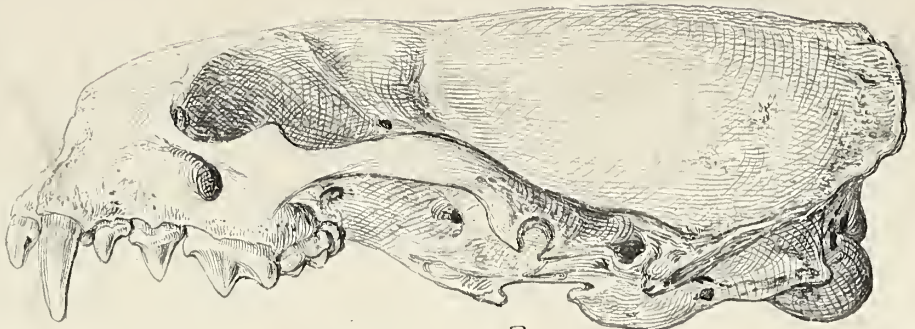


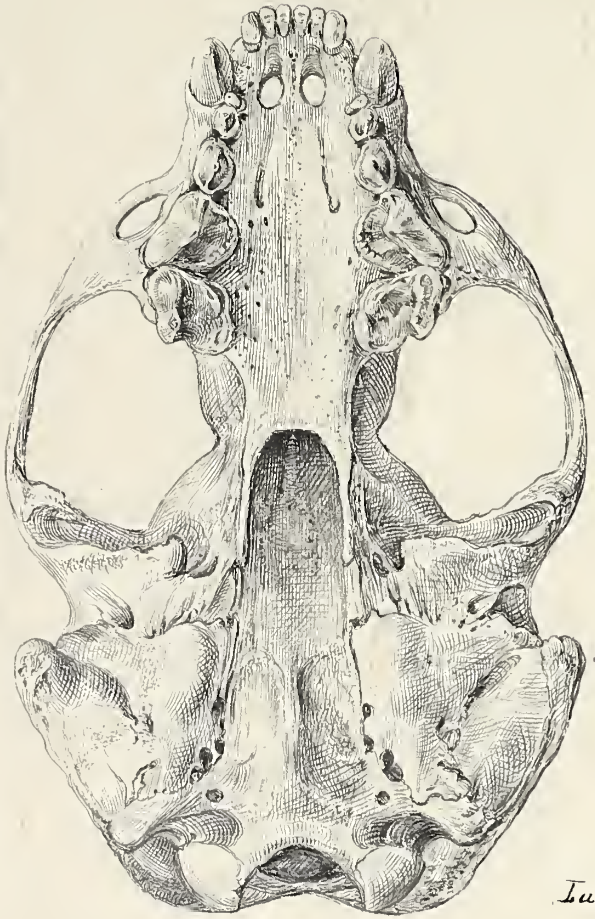
Mustela martes
1163 adirondacs, N.Y.

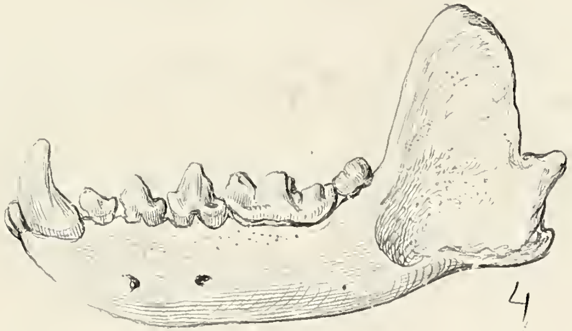


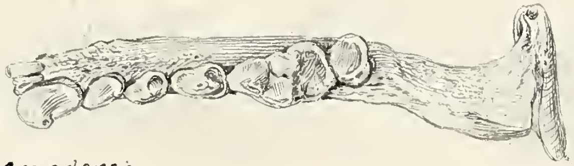
R. Metzeroth fec.

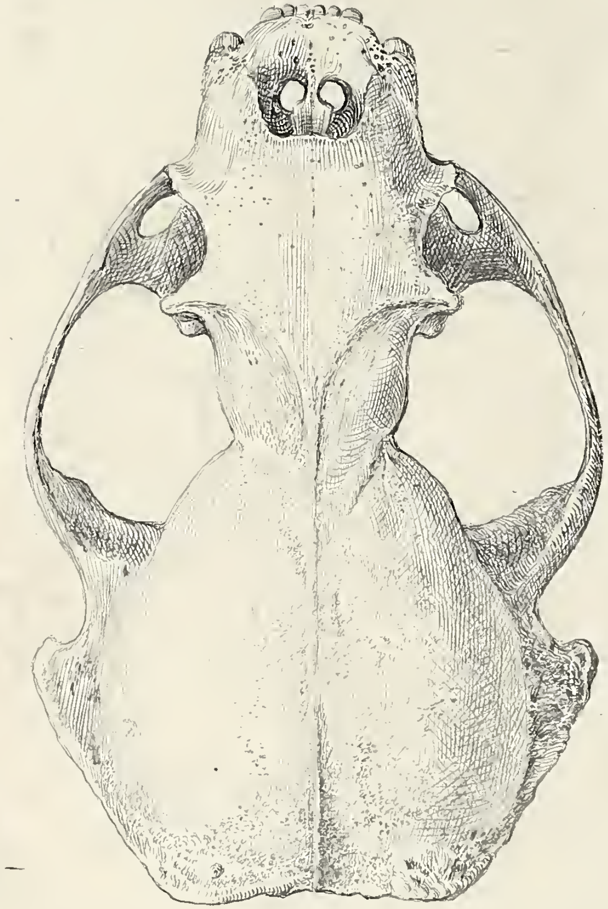
XXXVIII


3


1

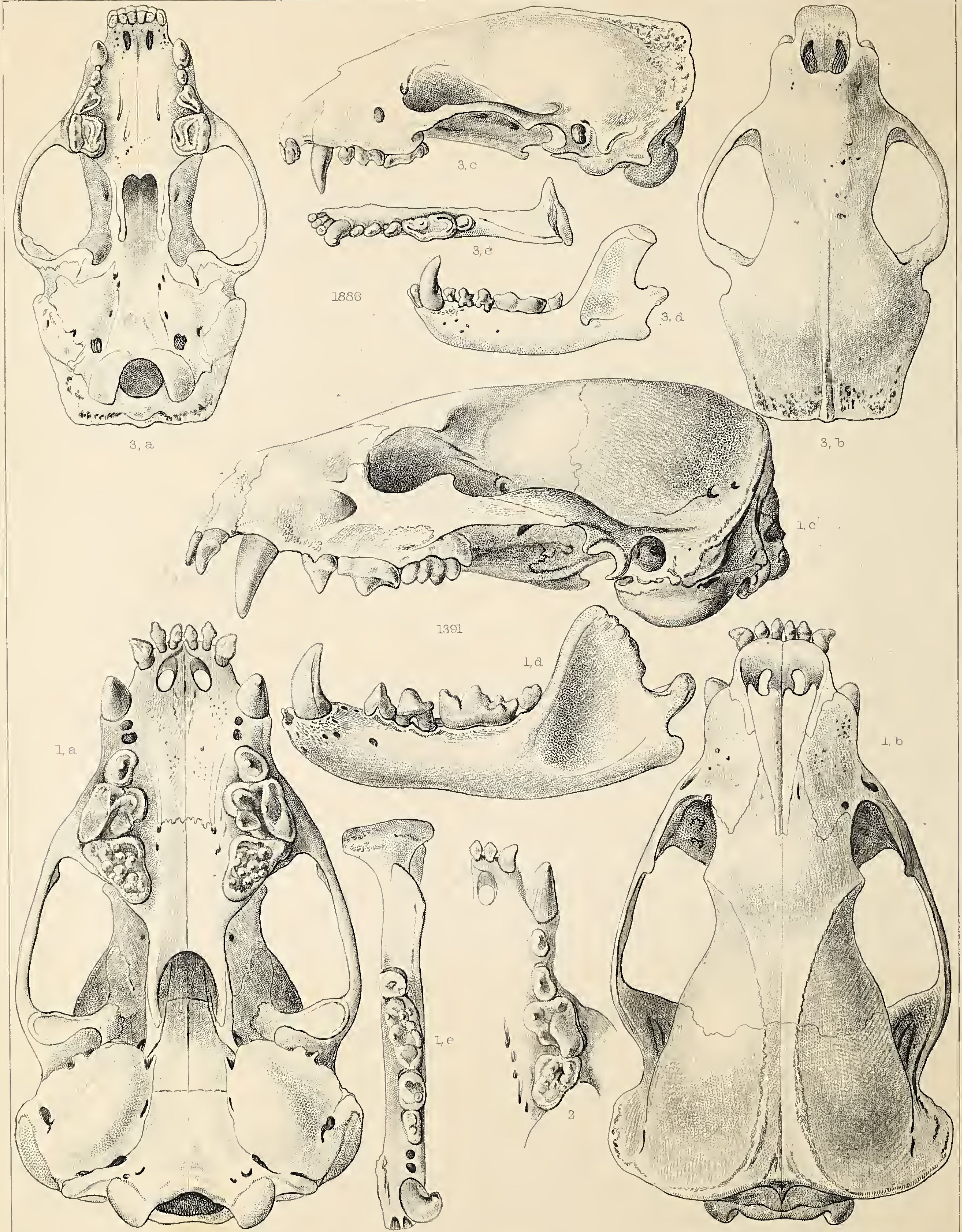

4


5


2

Lutra canadensis
Washington

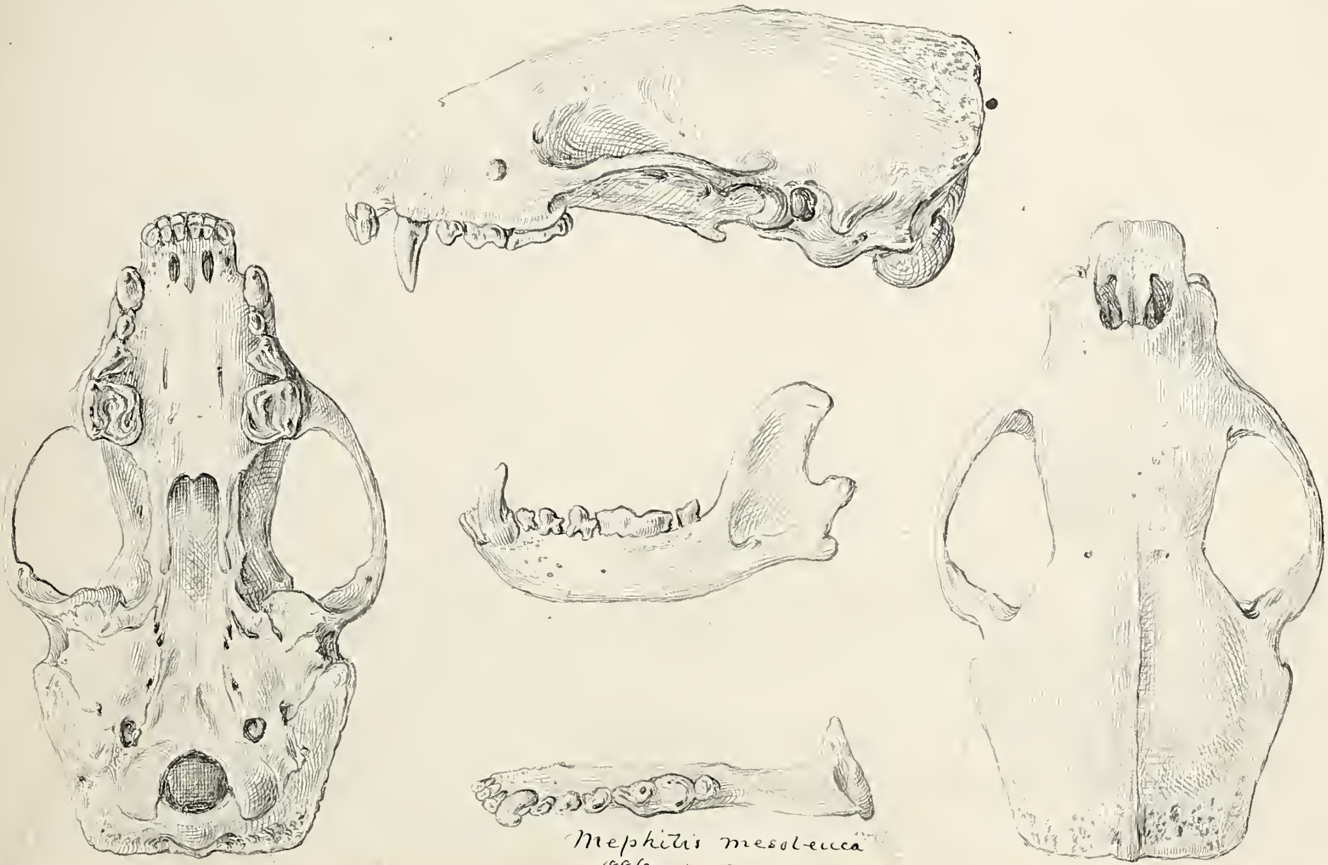
[illegible]



R. Metzeroth sc.

39.

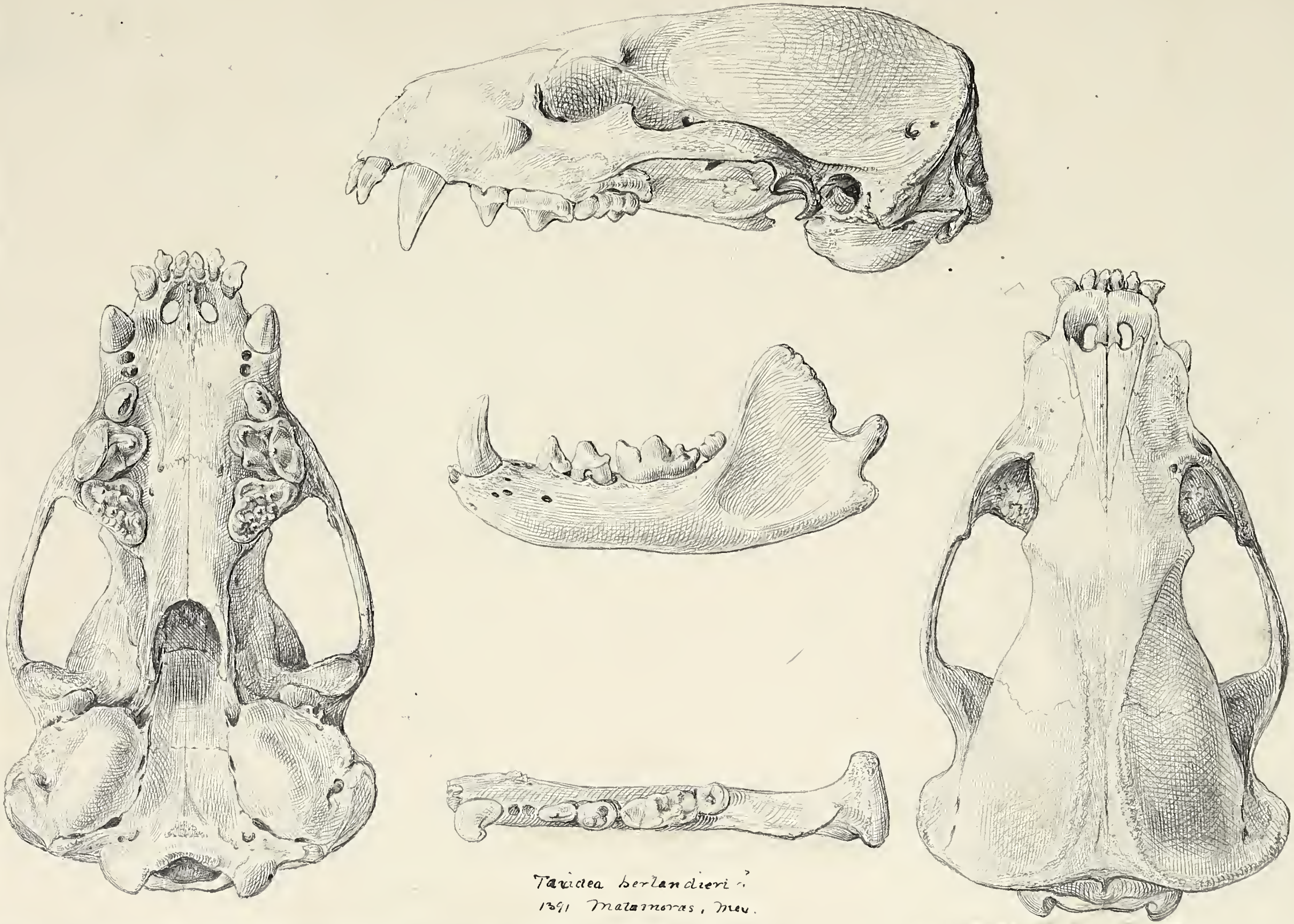
1886.



Mephitis mesoleuca

$\frac{1886}{790}$ W. Texas.

XXXV
1391

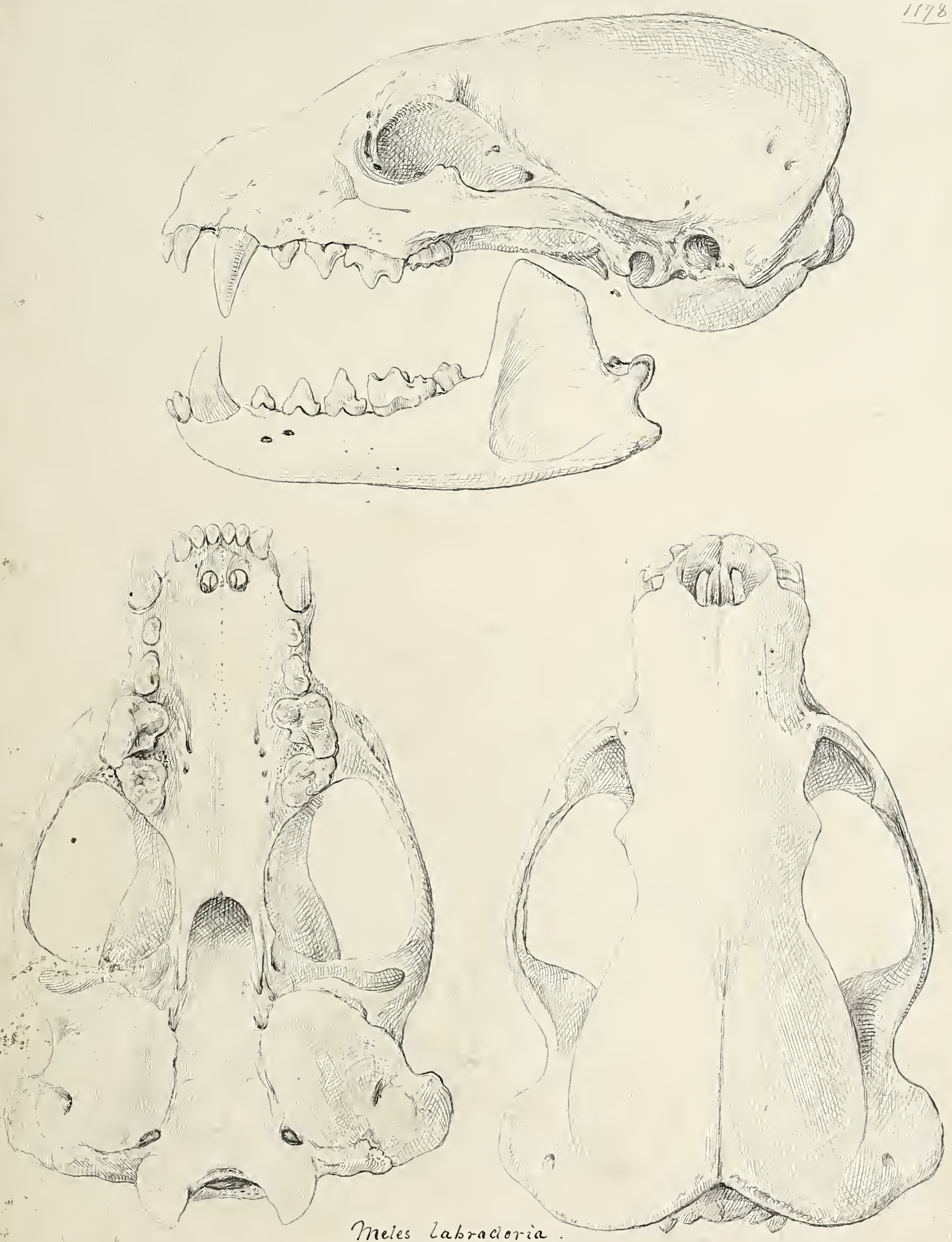


Taxidea berlandieri?
1391 Matamoras, Mex.

Robert C Mitzeroth del 1855

XXXIX

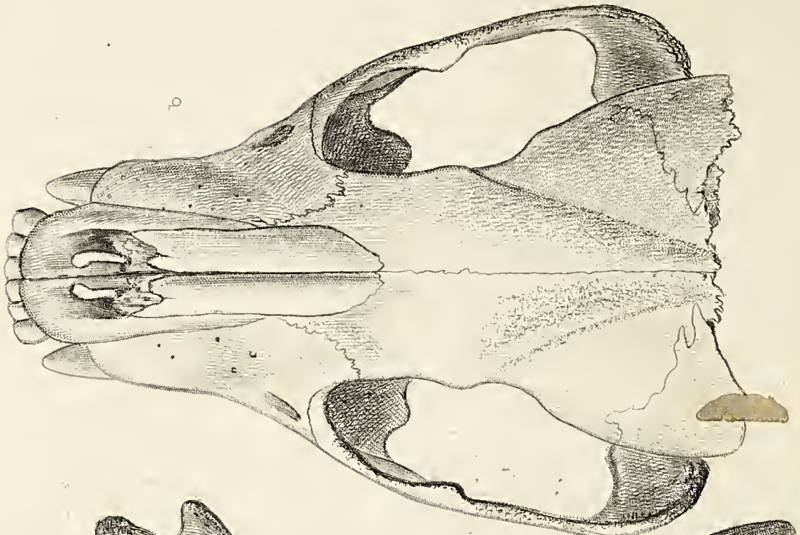
XXXIX

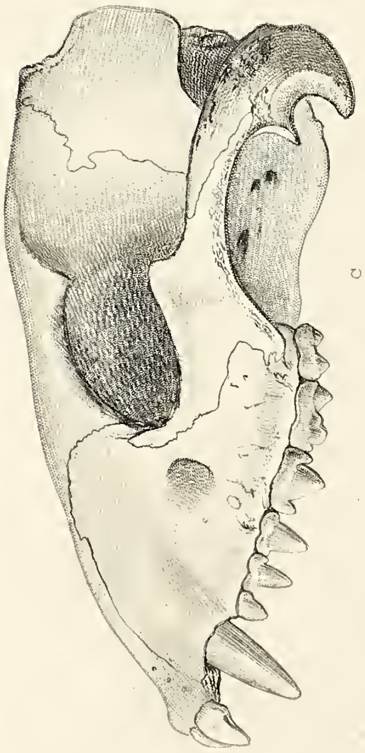


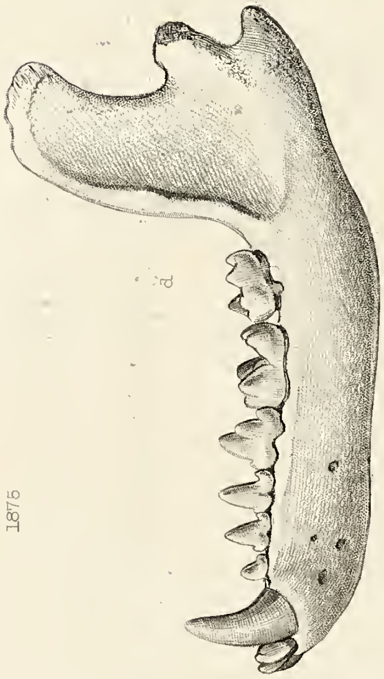
Meles labradoria.

$\frac{1178}{207}$, Bois de Sioux. Neb.
Suckley

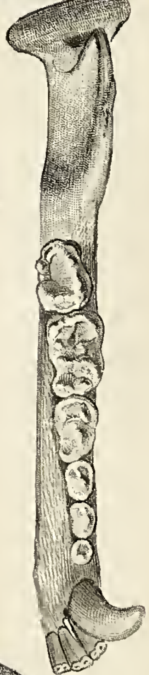
J. C. Rinard & R. Metzeroth

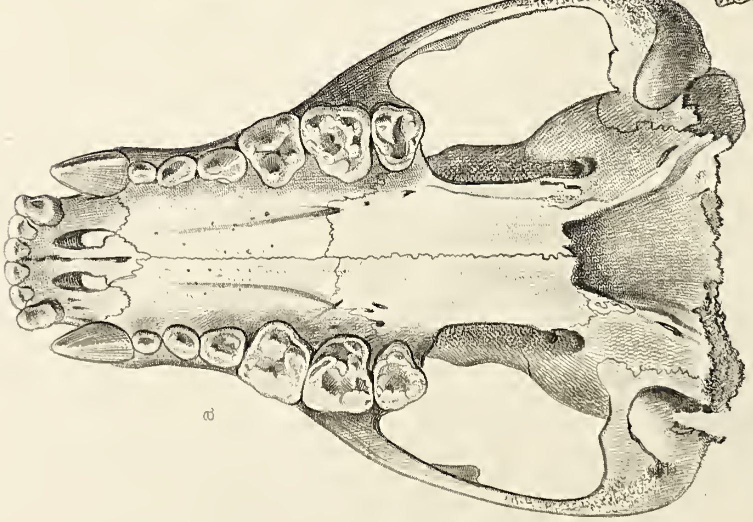






1875

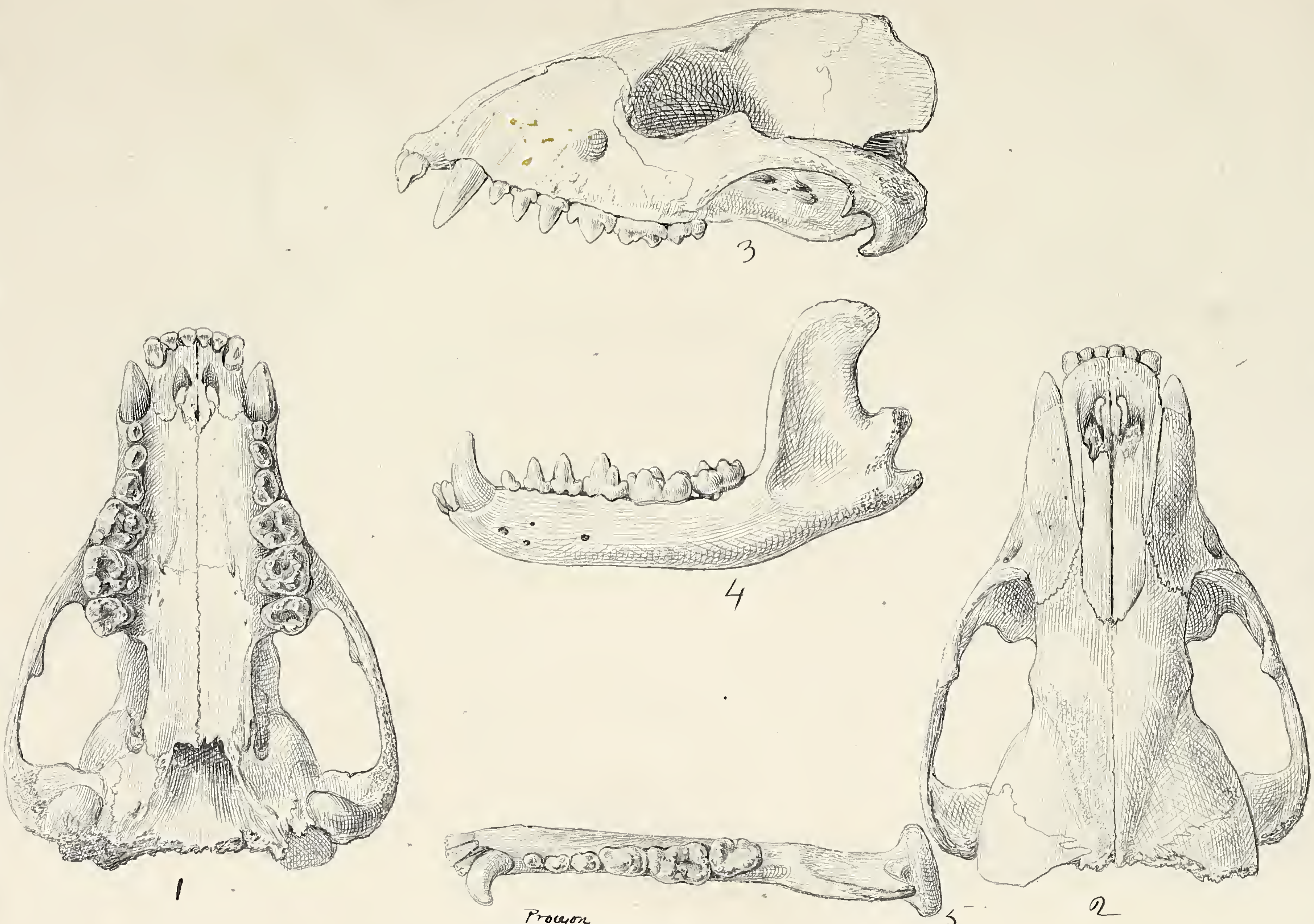




R. Metzeroth fec.

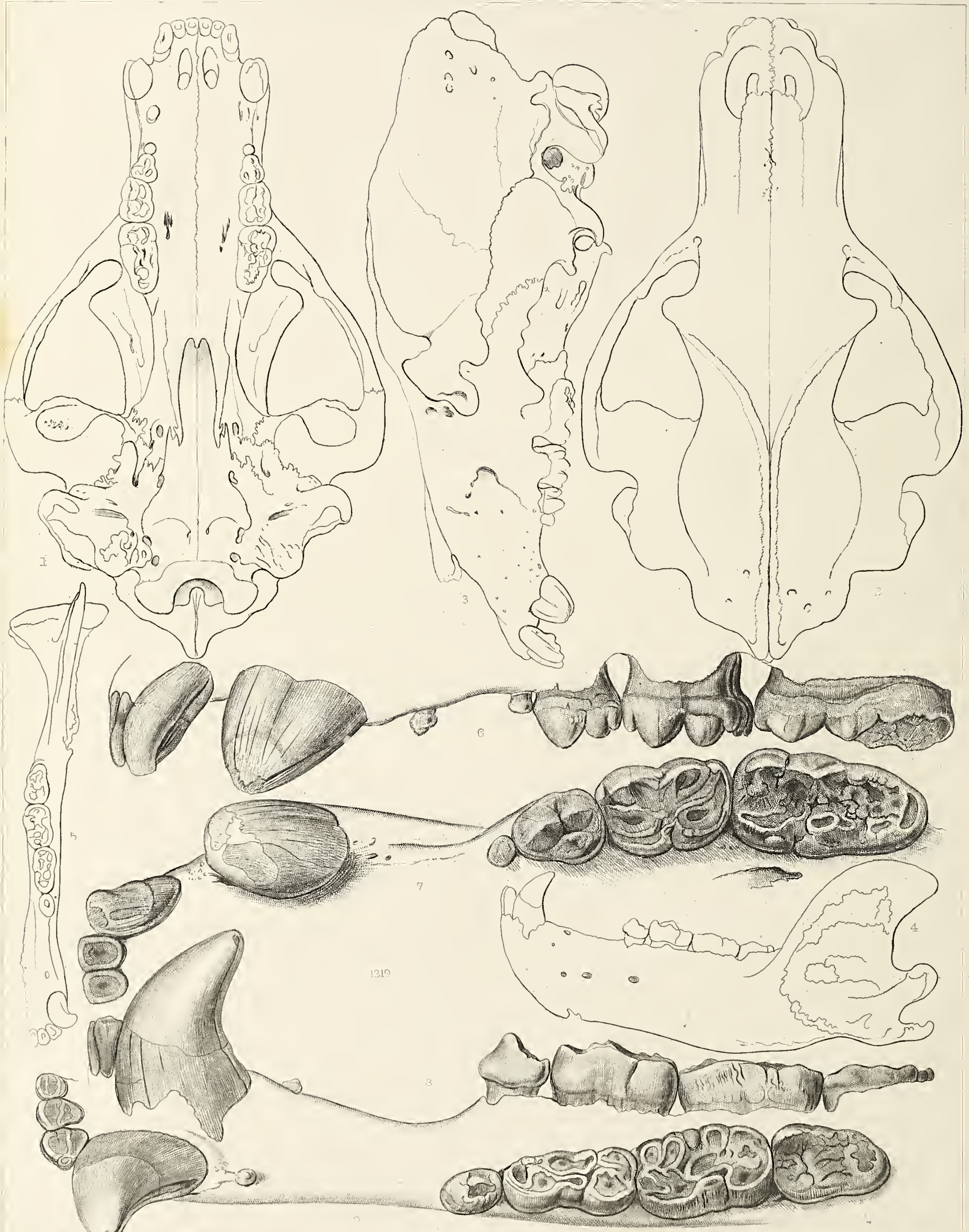
XI 4

1875



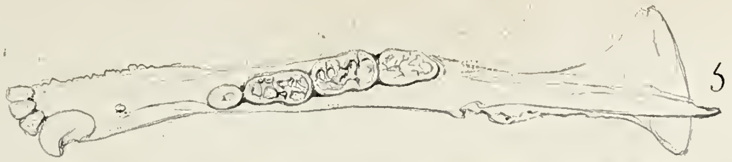
Procyon
$\frac{1875}{672}$ Bodega Cal.

[illegible] 1855

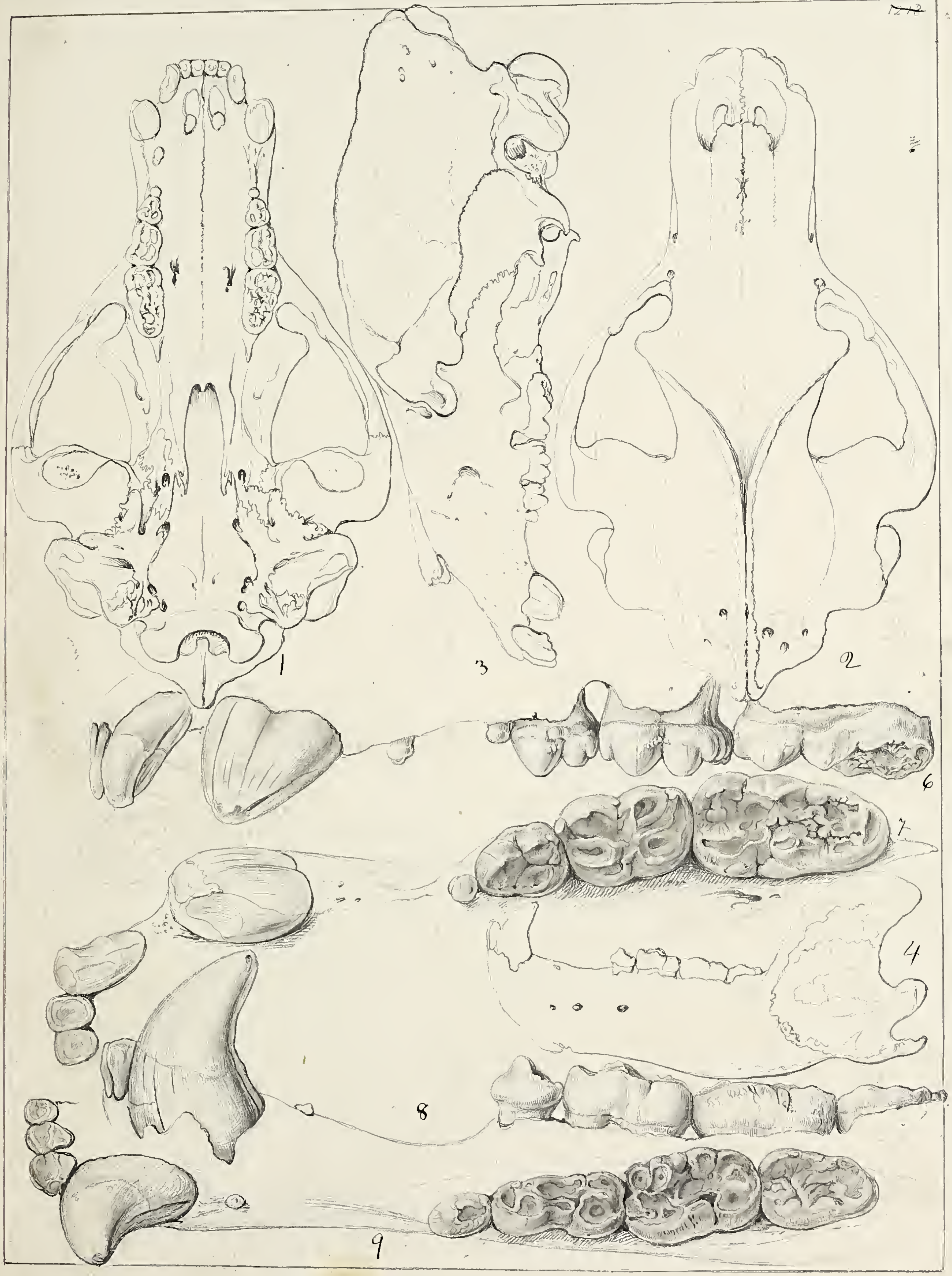


R. Metzeroth fec.

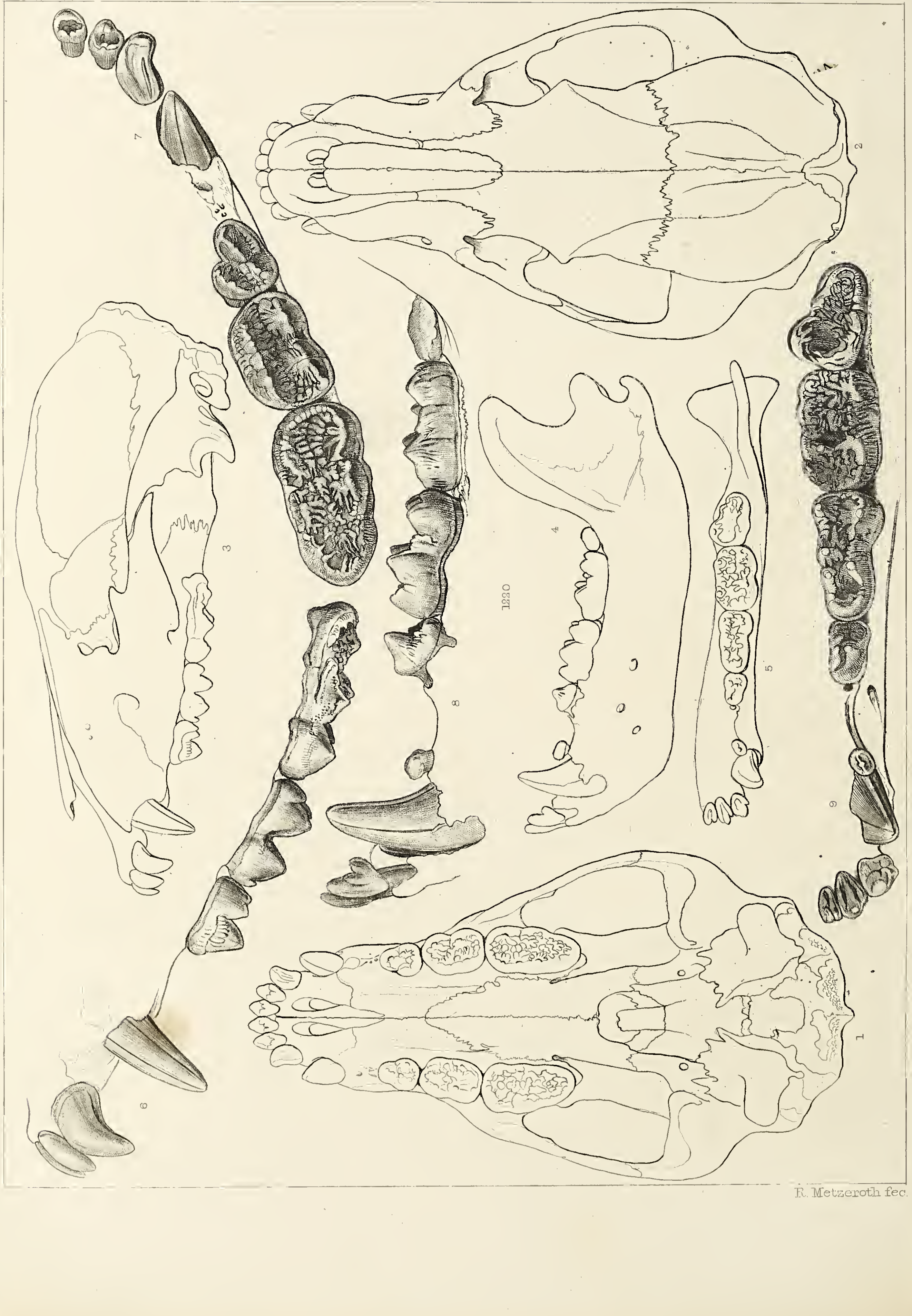
XLI



~~1218~~

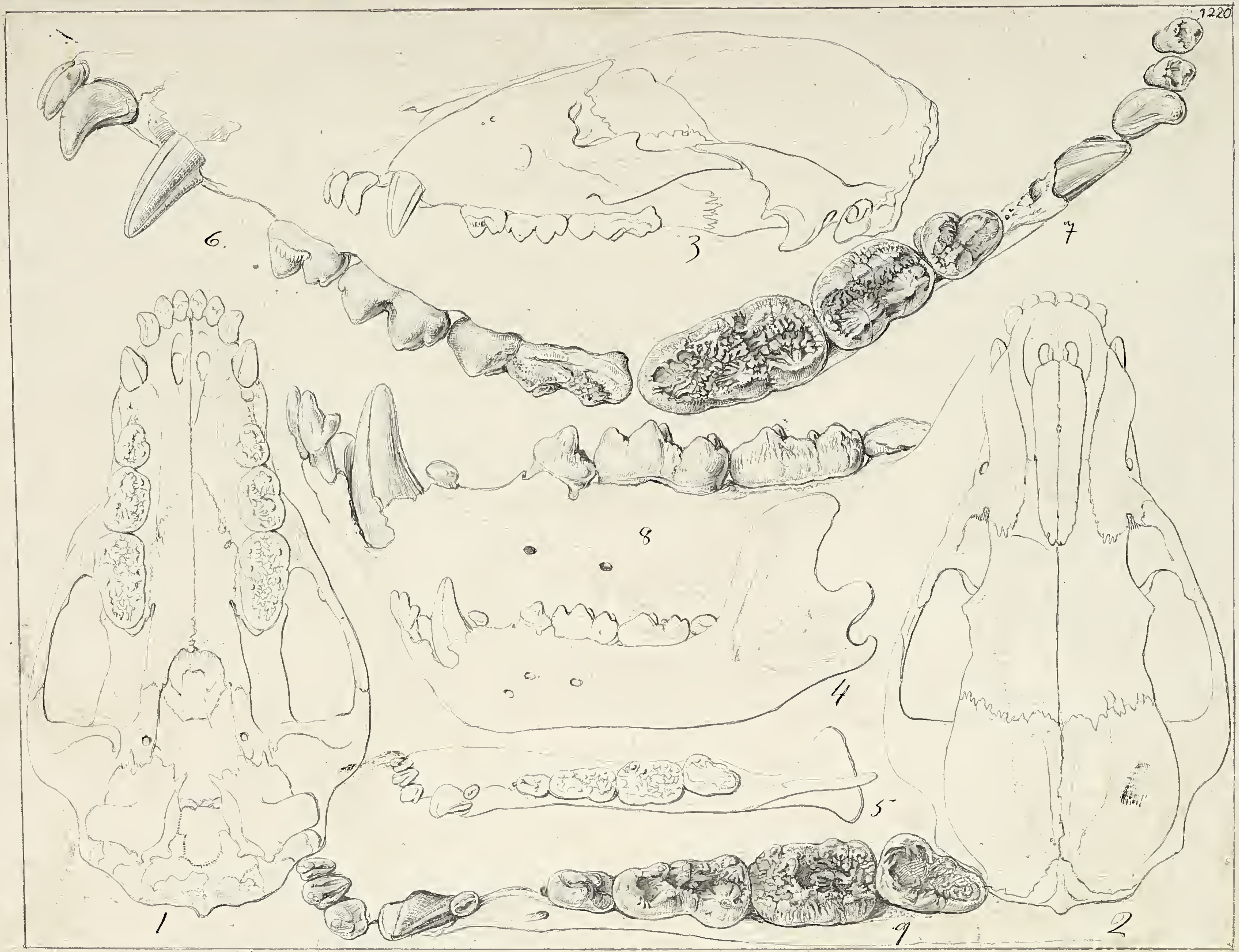


[illegible] [illegible]
W. [illegible]

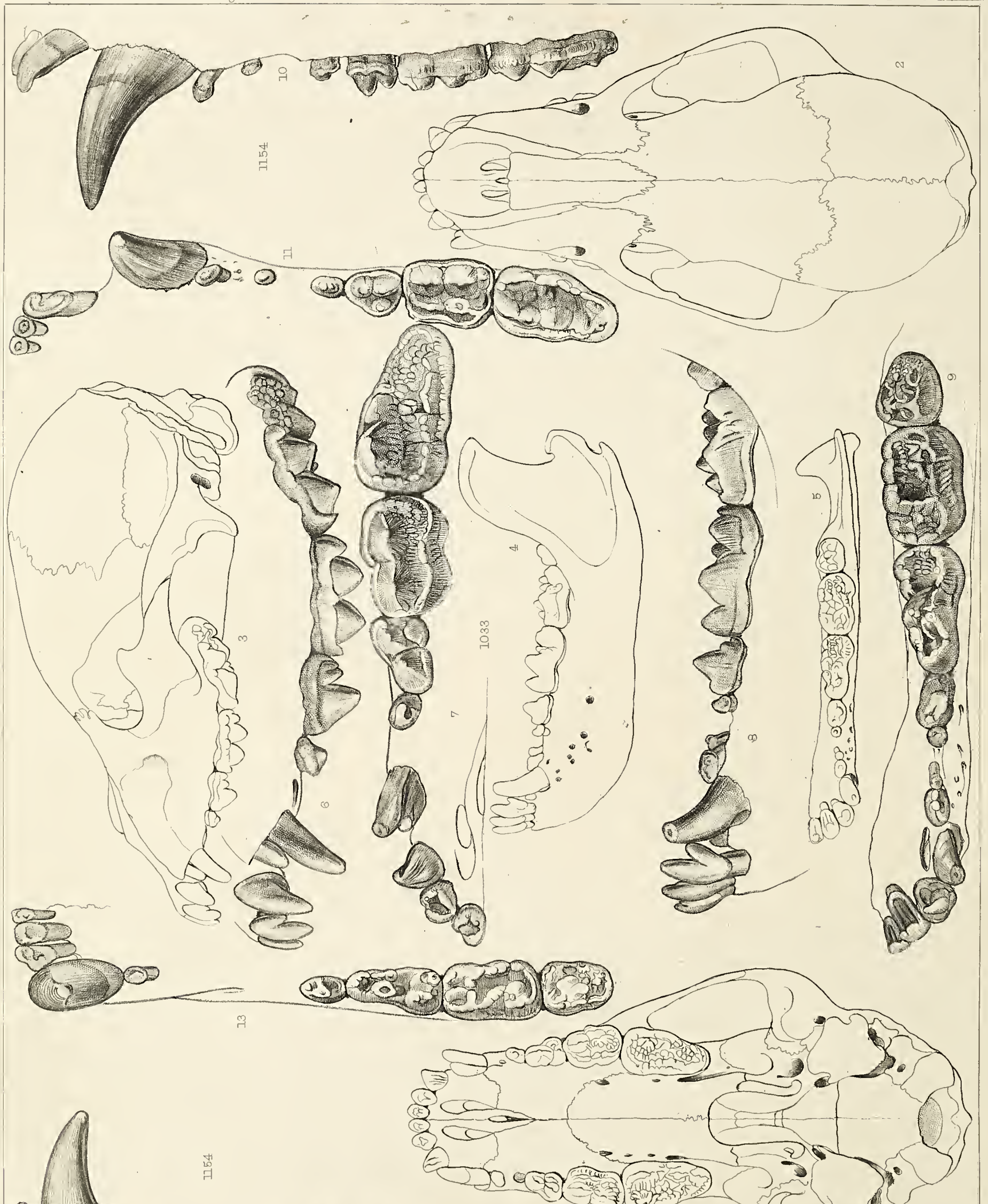


R. Metzeroth fec.

XLII

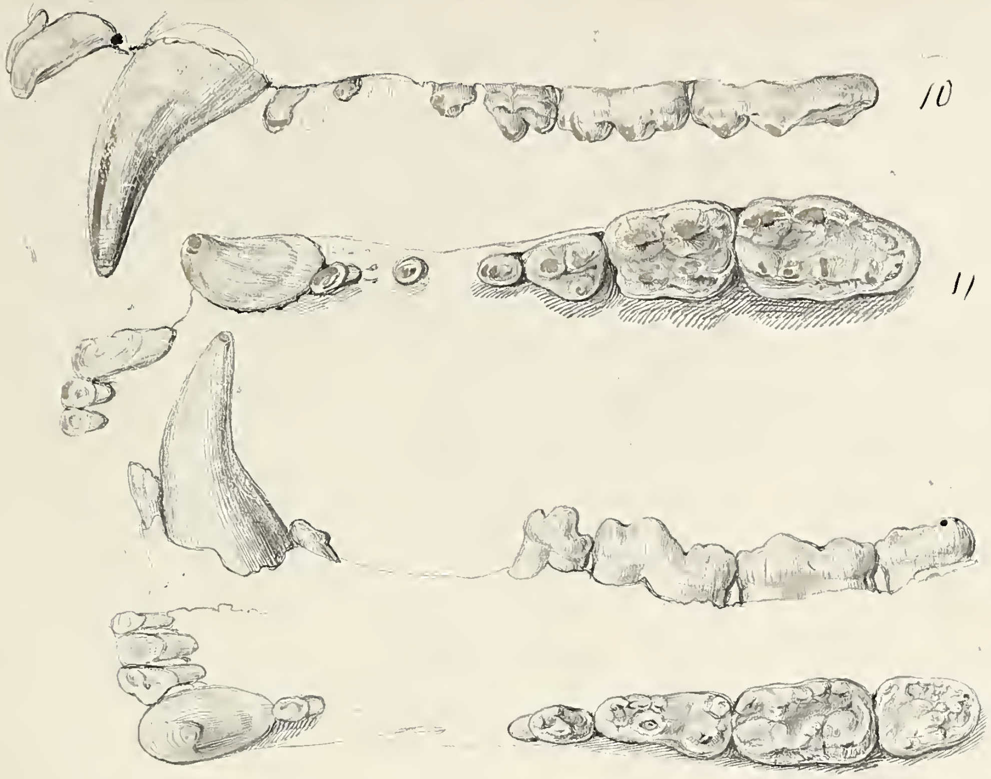


1220 Ursus [illegible]

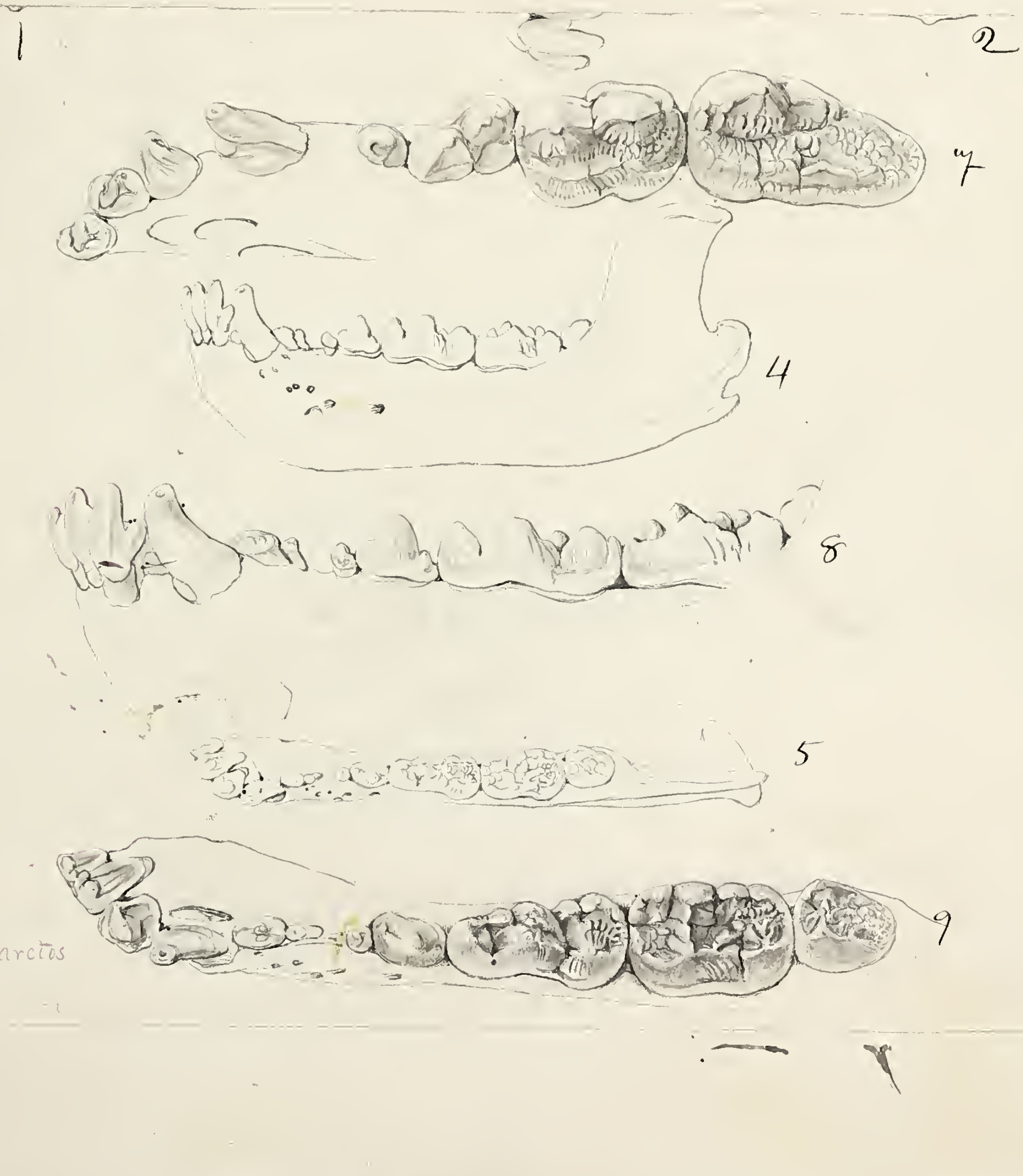


R. Metzeroth fec.

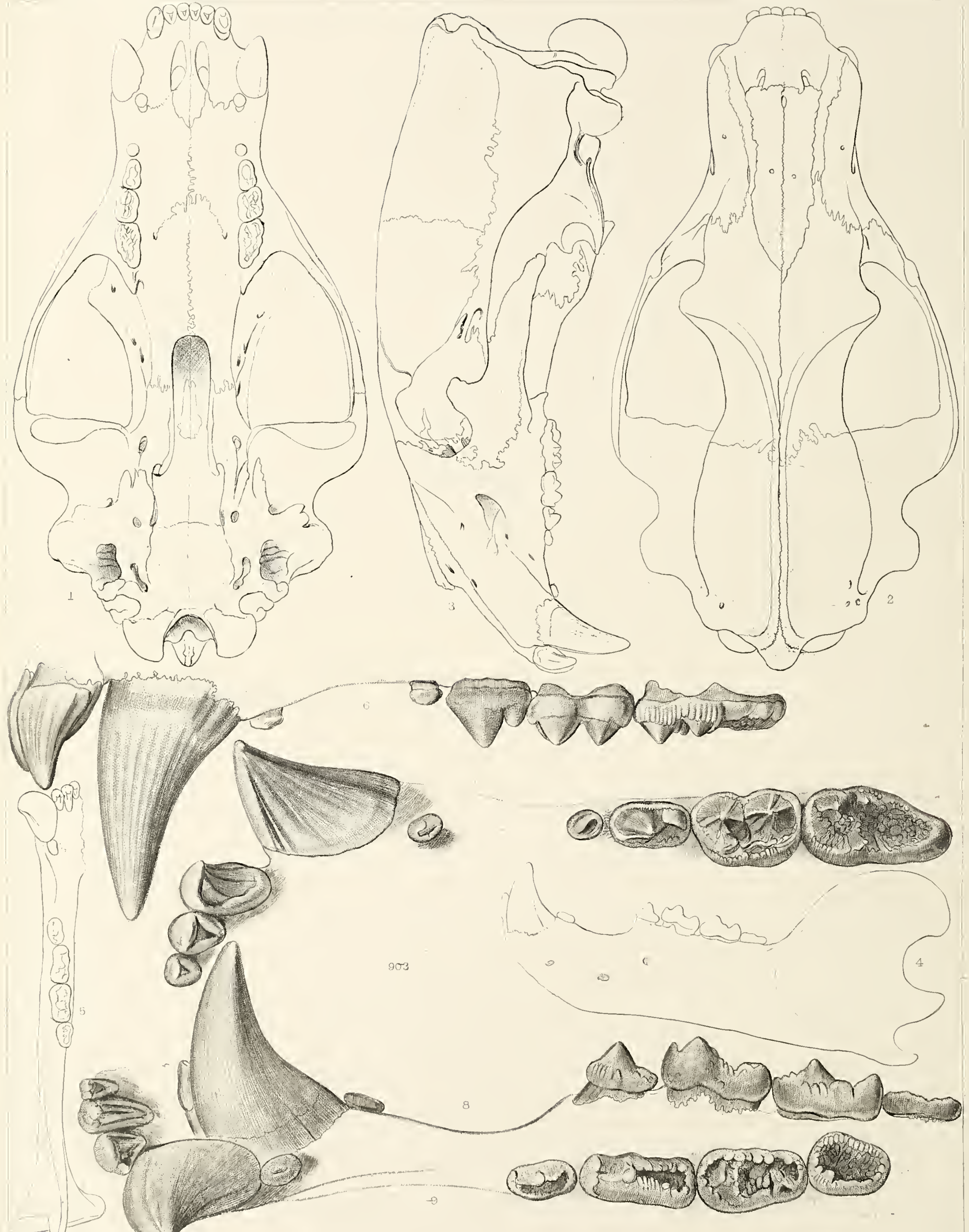
1154



1154 Ursus americanus
P. & k. Ex



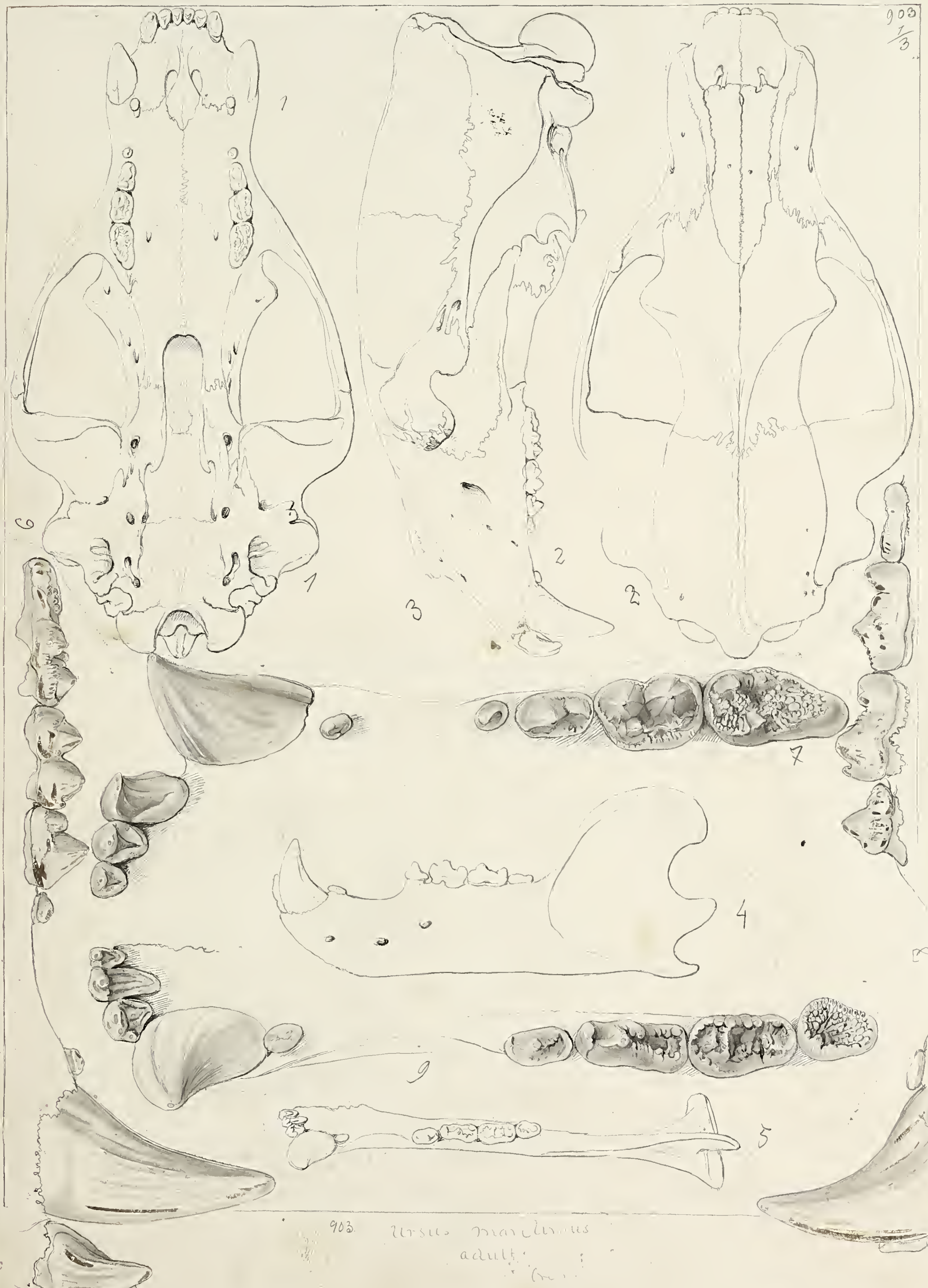
1133 Ursus arctos
421 2½ p



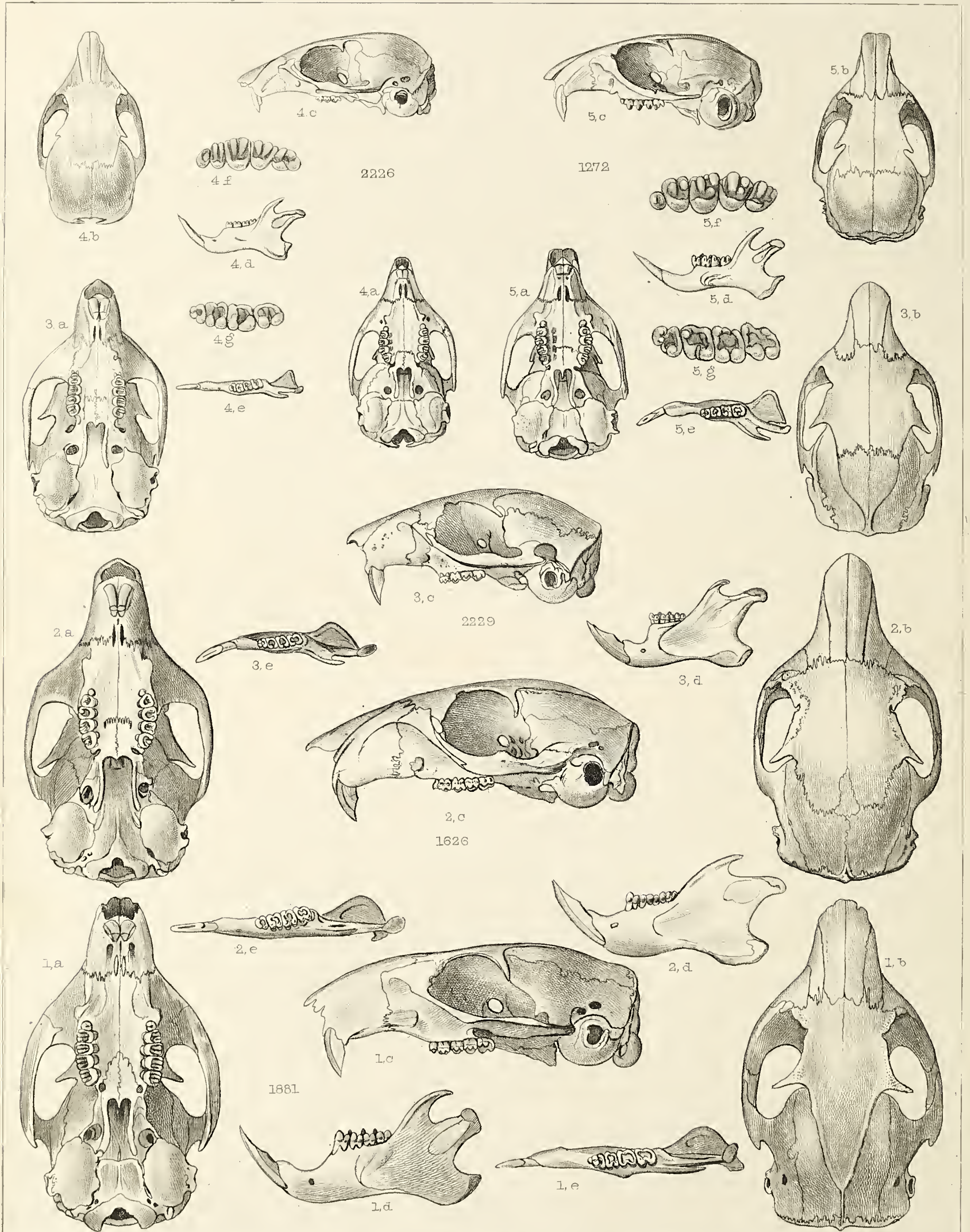
R. Metzeroth fec.

No. 6 - L. T.
March 8th

XLIV



903. Ursus maritimus
adult.

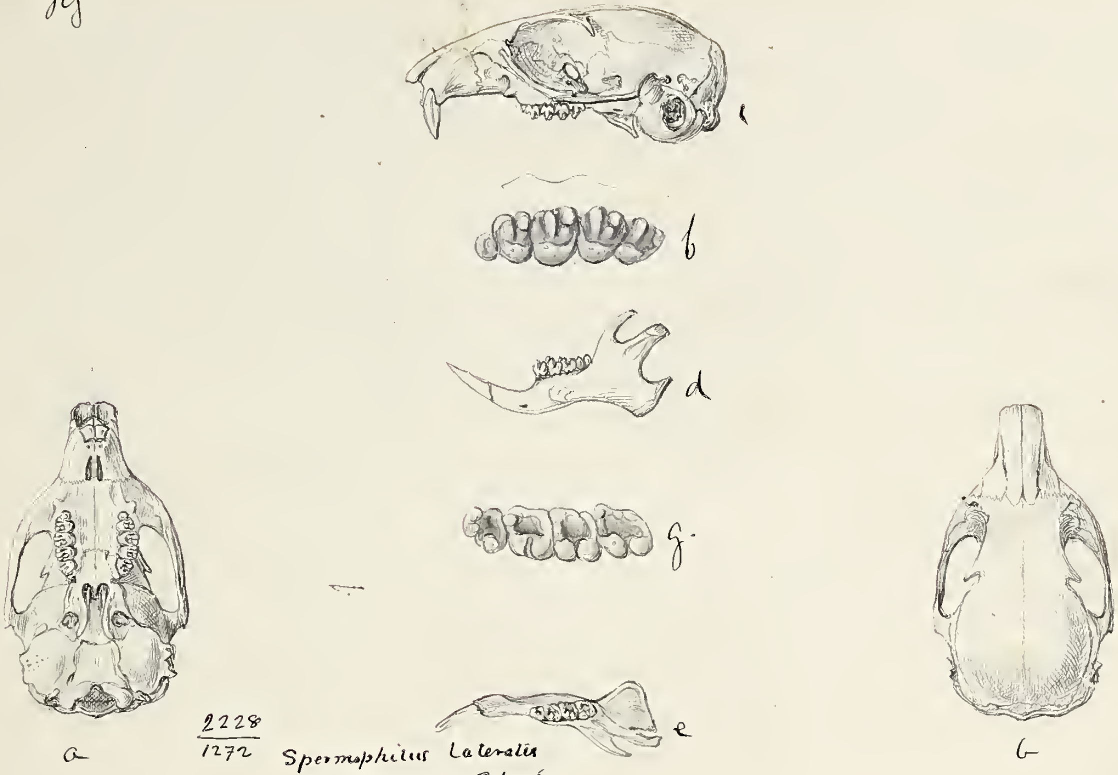


R. Metzeroth fec.

XLV Fig 5

1272

1 : lu

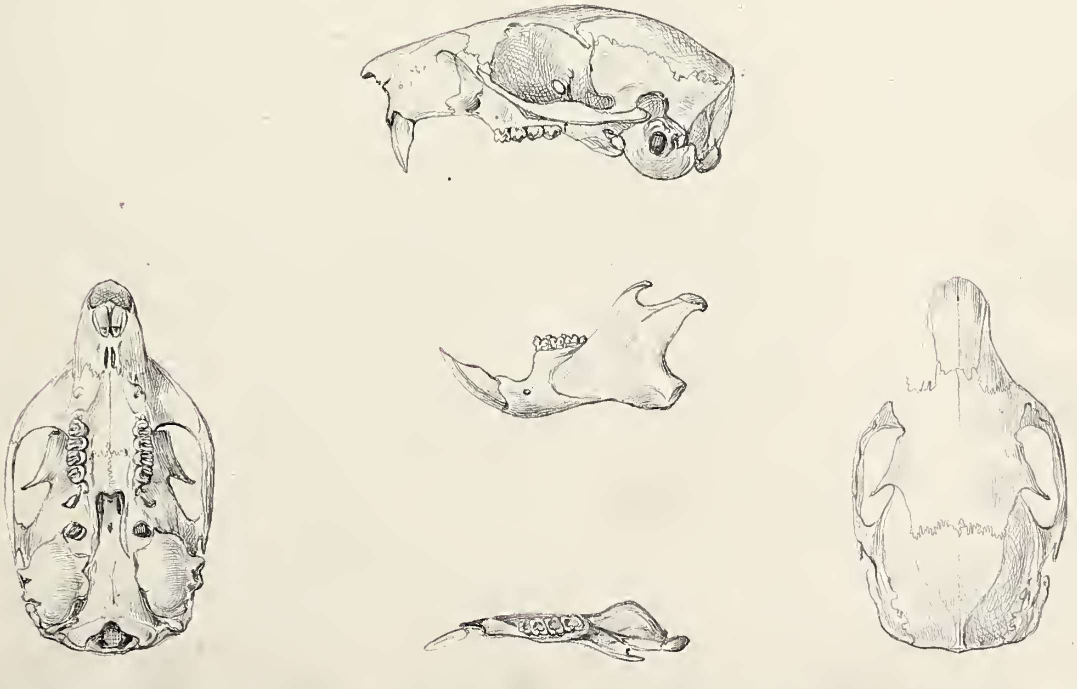


2228/1272 Spermophilus Lateralis
upper des Chutes

7.12.36

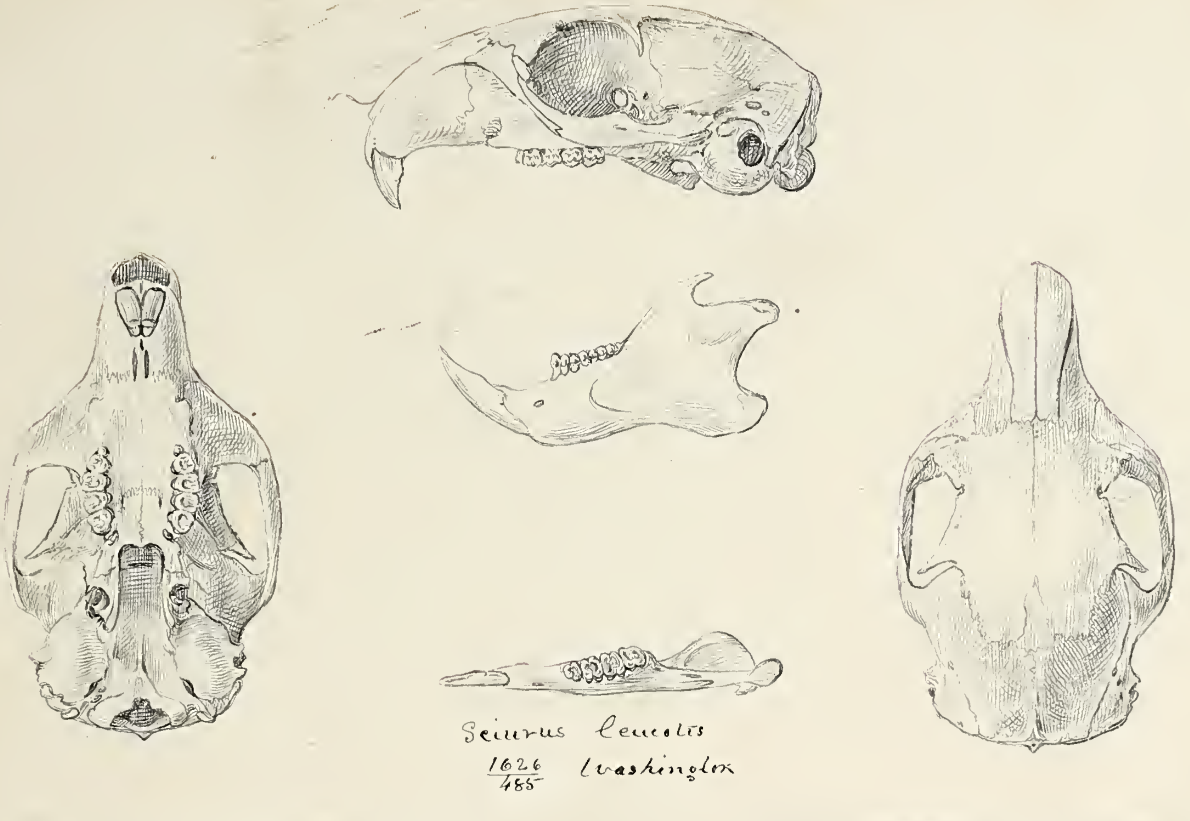
Fig. 3

1265/2229



2229/1265 Sciurus
Upper Des Chutés
J.S.H

Fig: 2 XXV 326

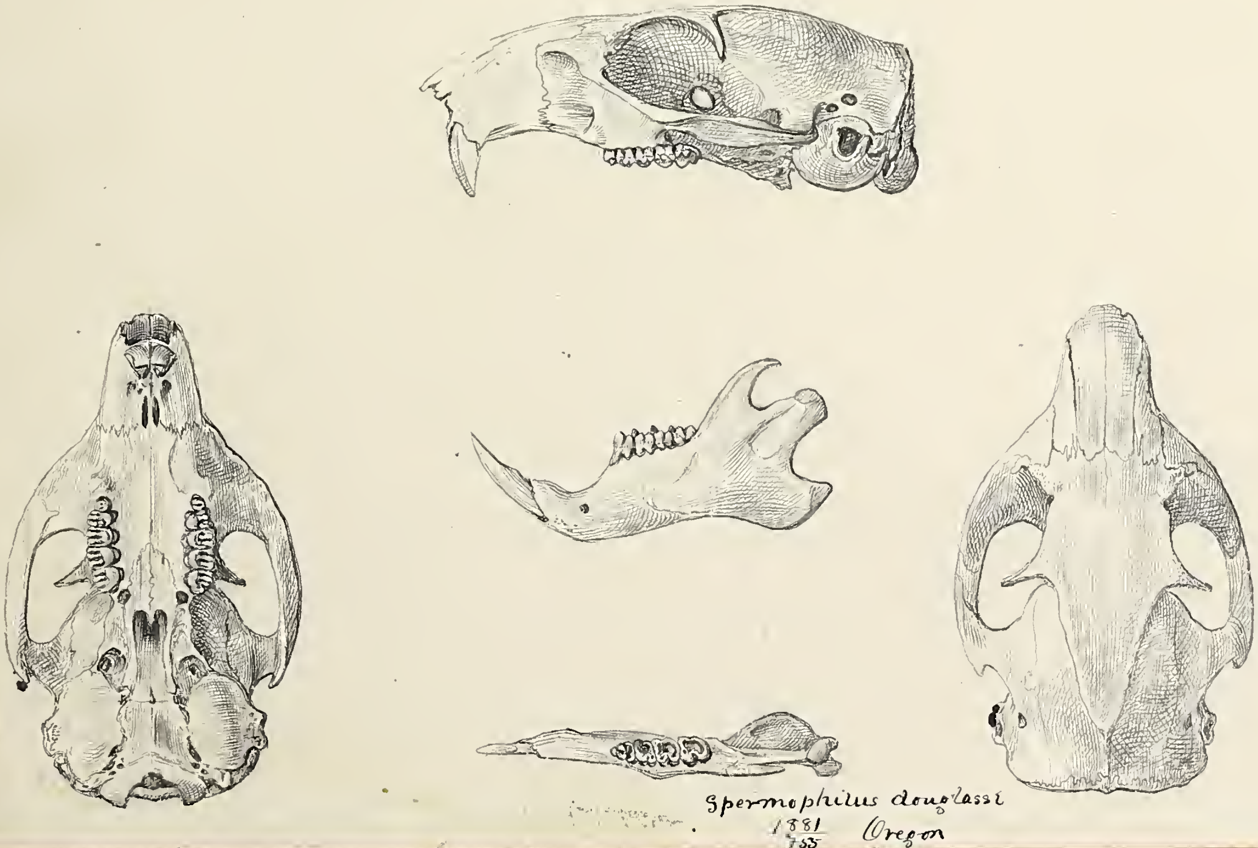


Sciurus leucotis

$\frac{1626}{485}$ Washington

Fig 1

1881



Spermophilus douglassi

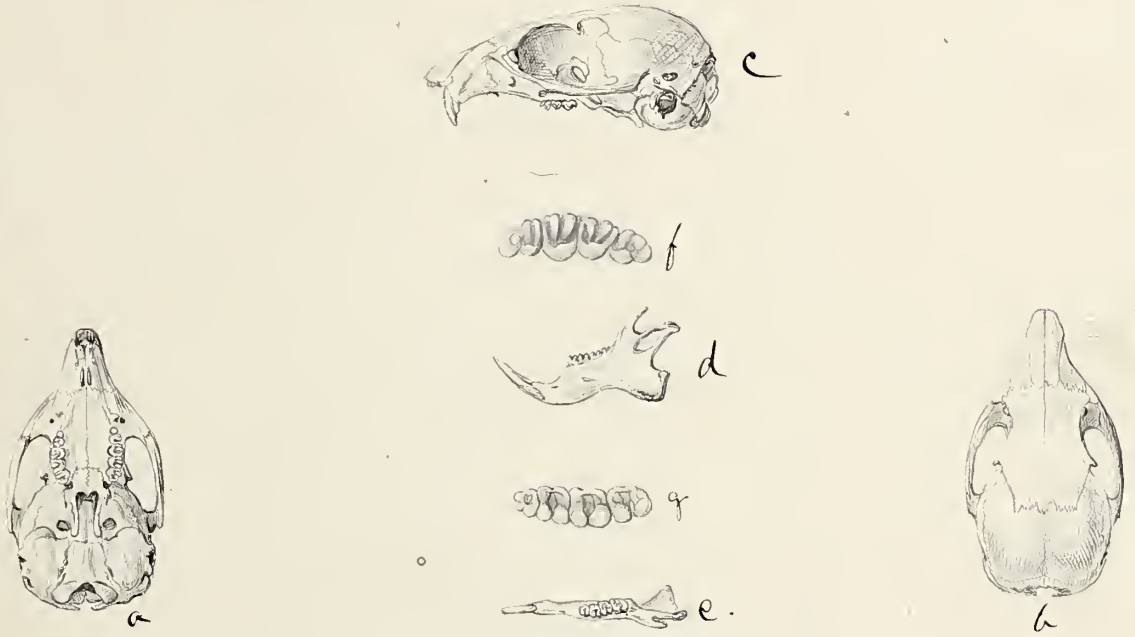
$\frac{1881}{755}$ Oregon

R. S. Williams
7.12.56

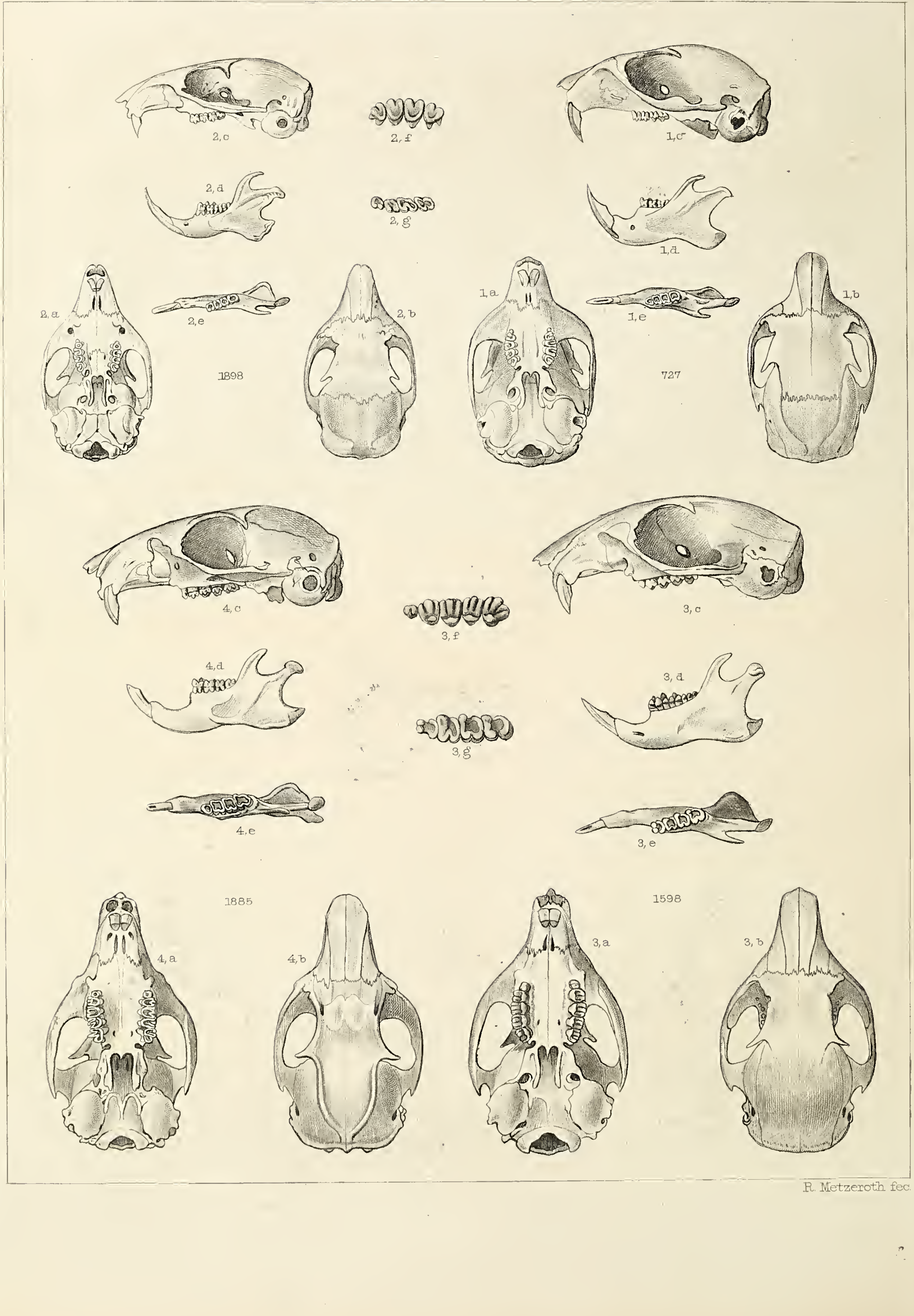
XLV

Fig 4

2226



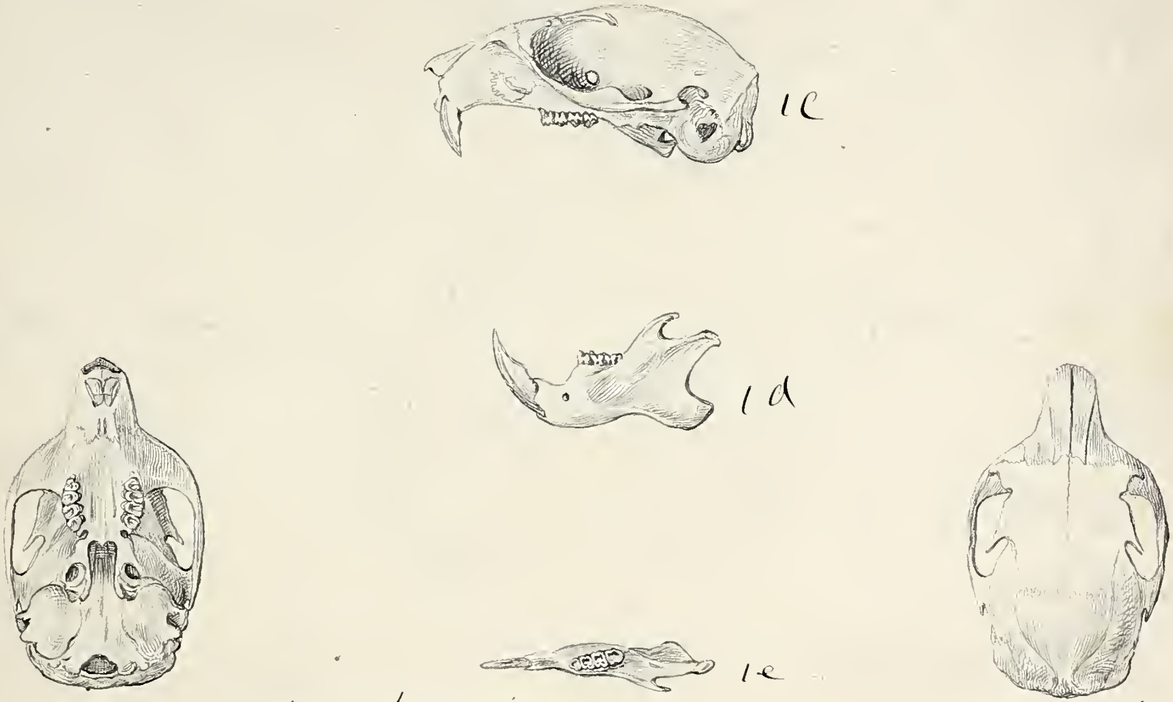
2226 / 1301 Tamias
Cape Flattery.



R. Metzeroth fec.

XLVI

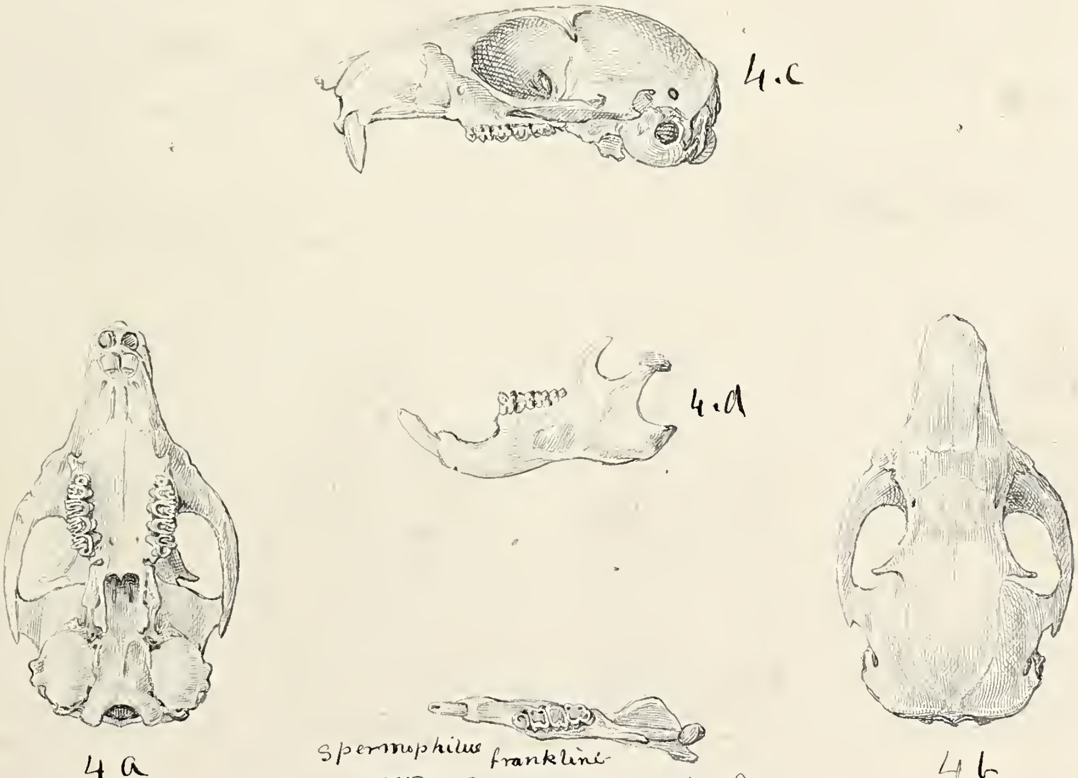
727



Sciurus hudsonius
727 Carlisle

XLVI

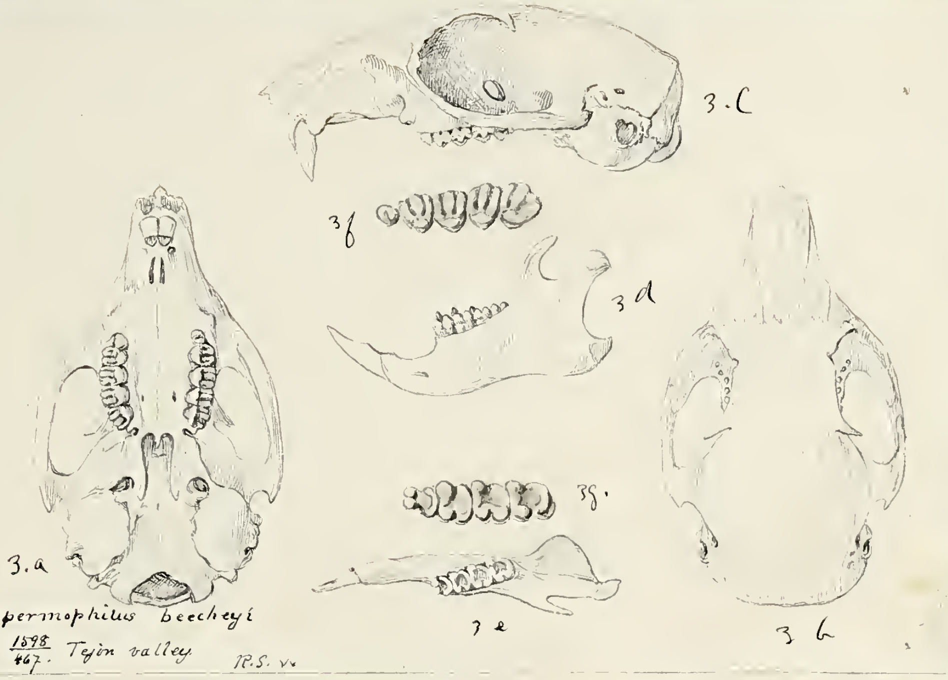
1385



Spermophilus frankline
1885 Raune.

XLVI

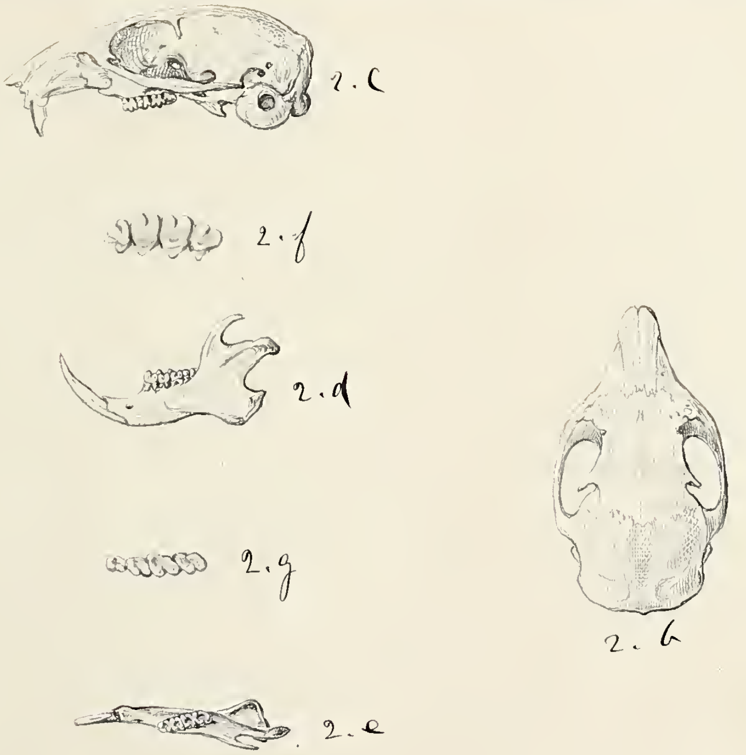
1598.



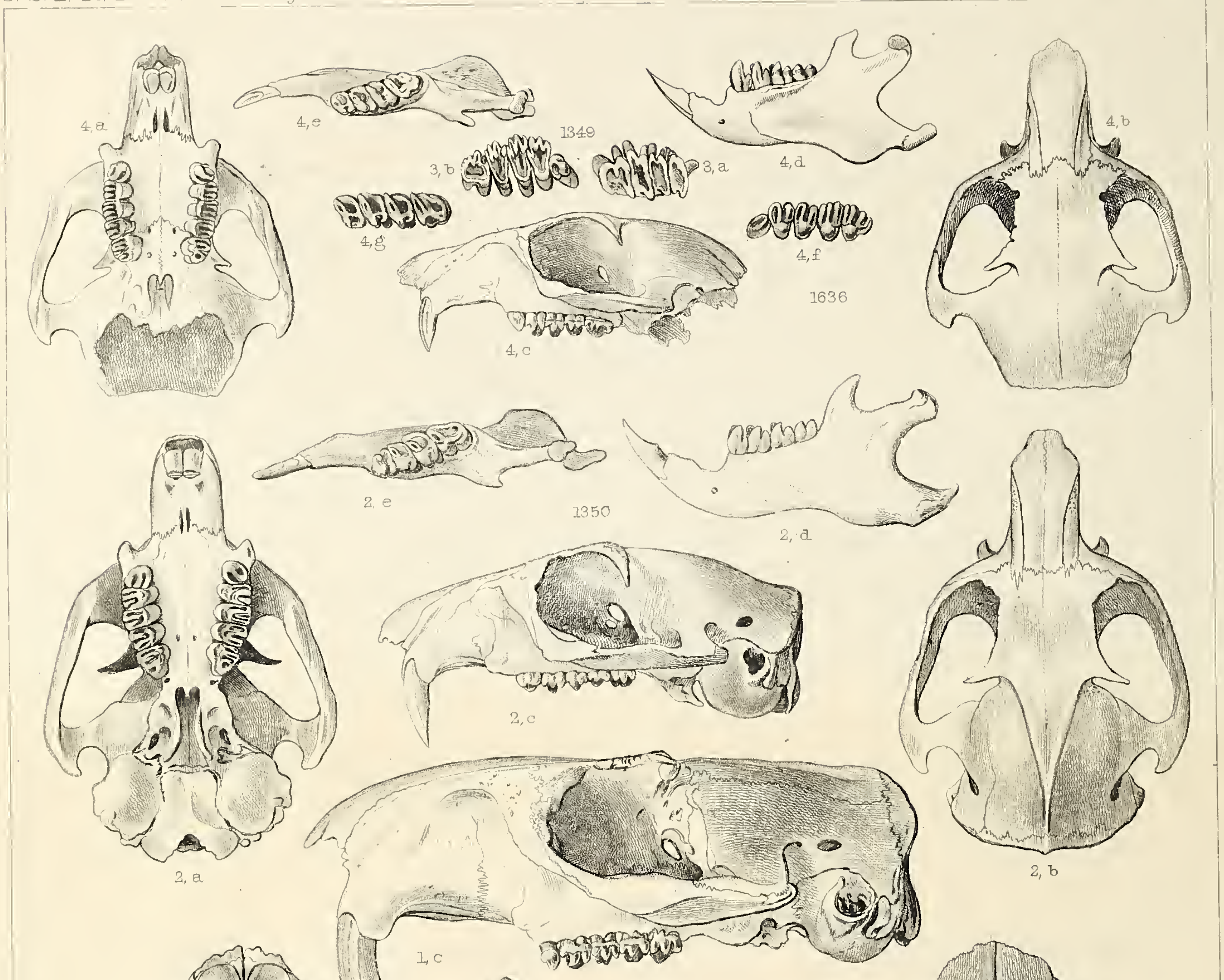
Spermophilus beecheyi
$\frac{1598}{467}$. Tejon valley

R.S. v.

1898



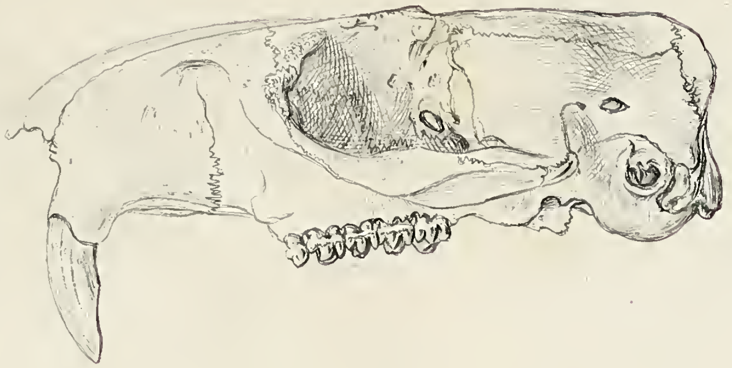
$\frac{1898}{840}$ Tamias americana
[illegible] N.Y.



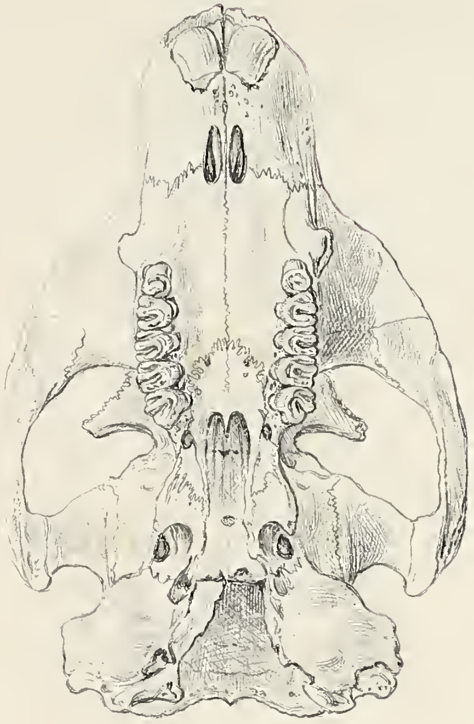
R. Metzeroth fec.

2372

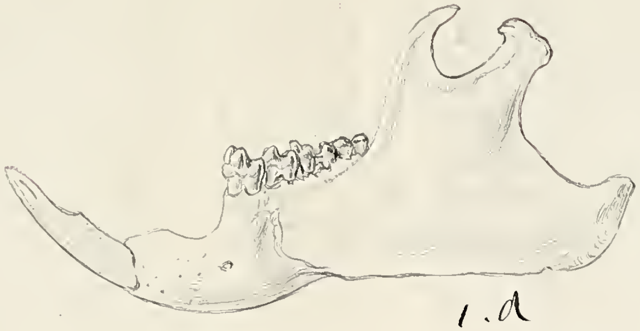
XLVII



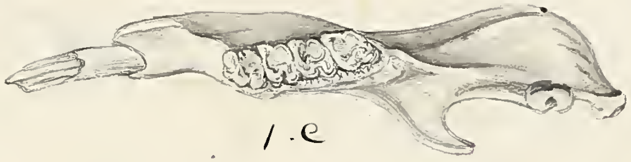
1.c



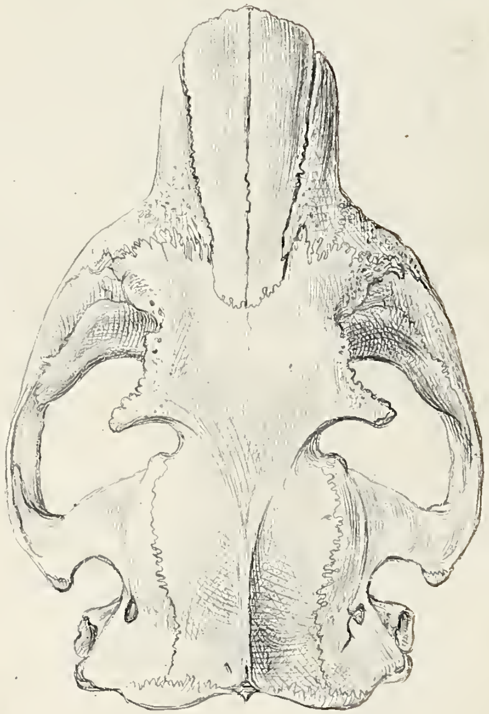
1.a



1.d



1.e

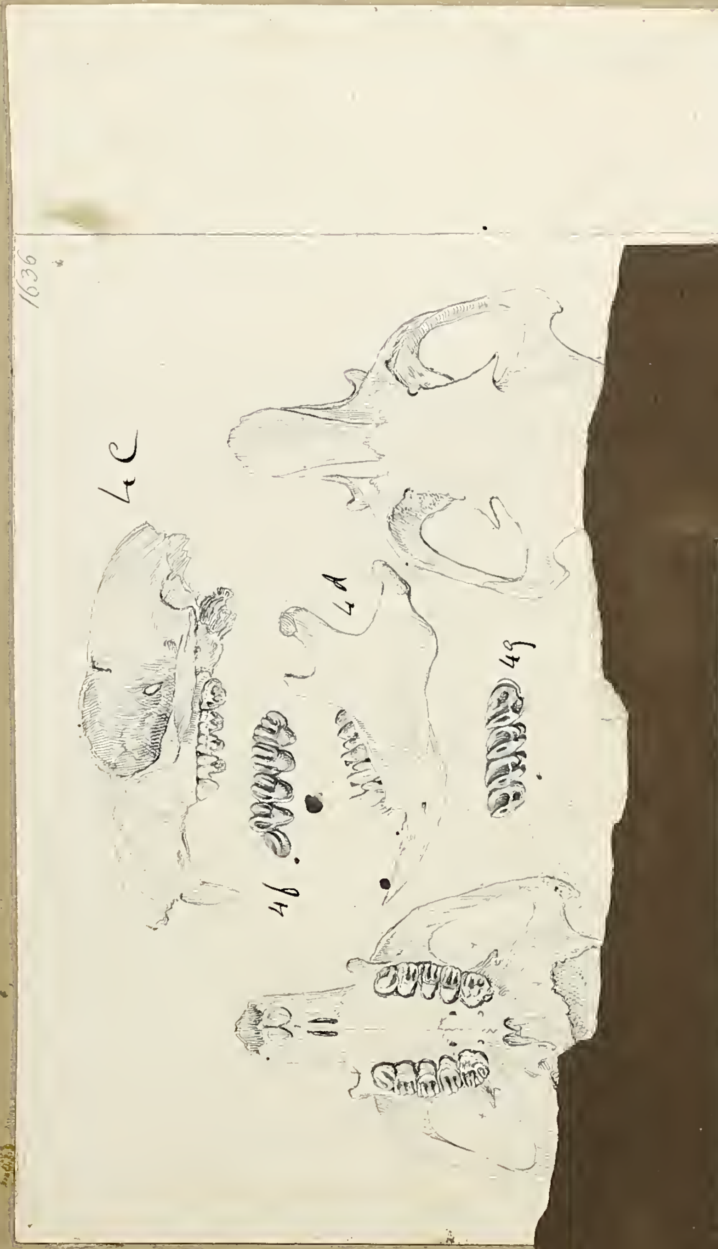


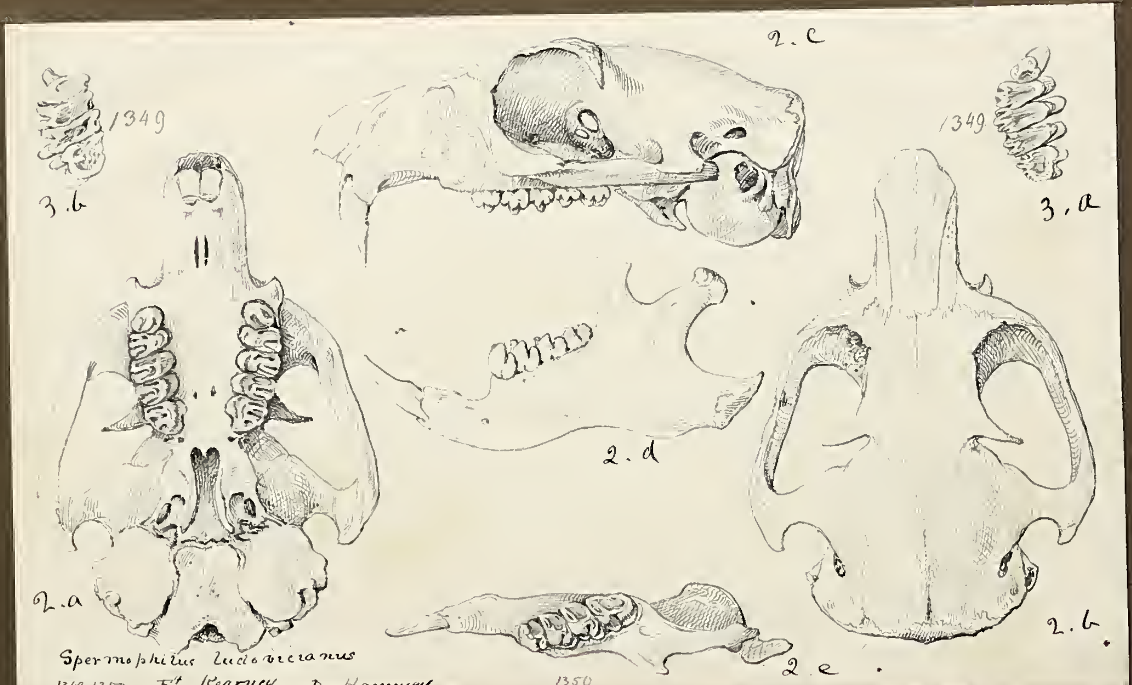
1.b

$\frac{2372}{1575}$ Arctomys
Blackfoot Country. Hayden

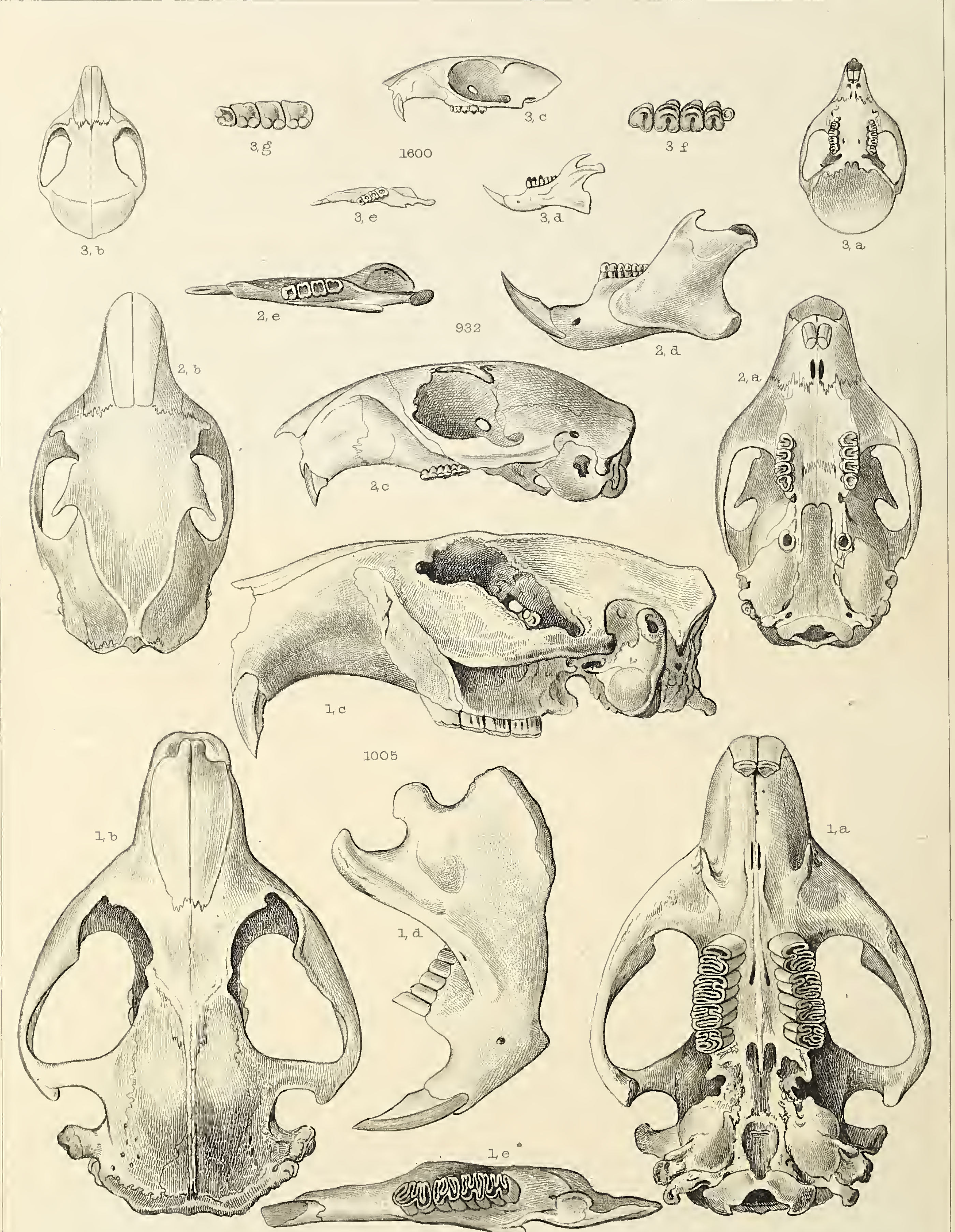
not monax

XLVII





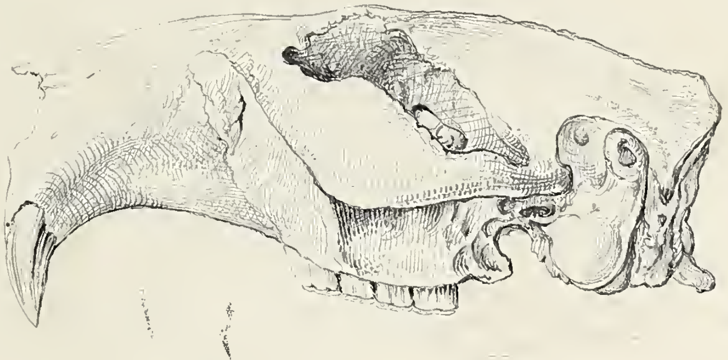
Spermophilus ludovicianus
1349. 1350. Ft. Kearney. Dr. Hammond

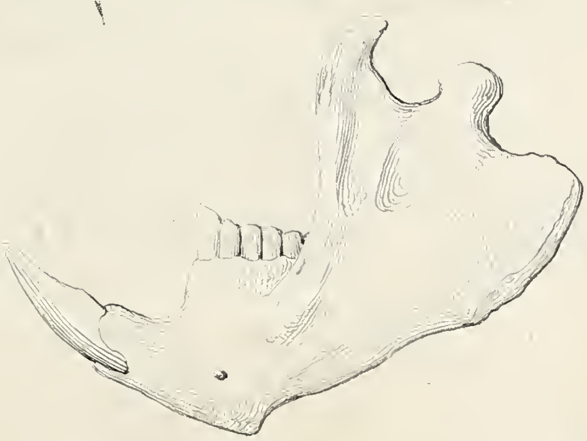


R. Metzeroth fec.

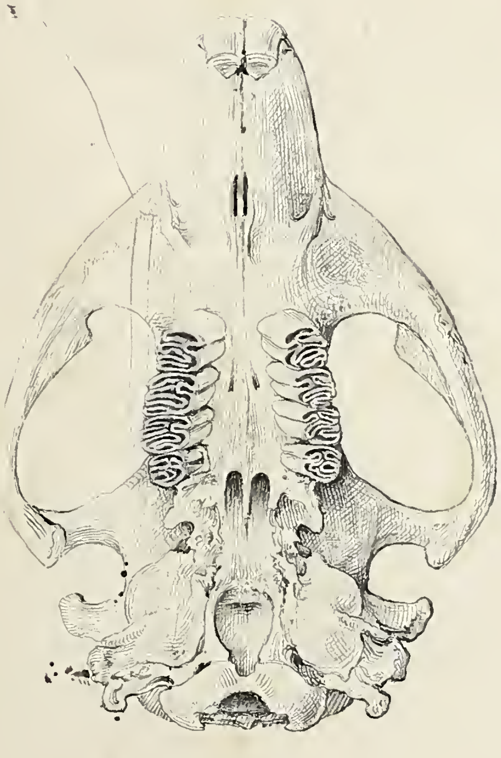
XLVIII

1003

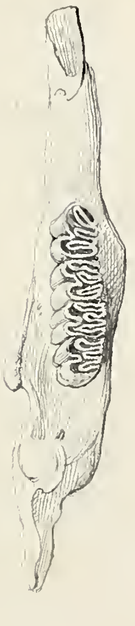


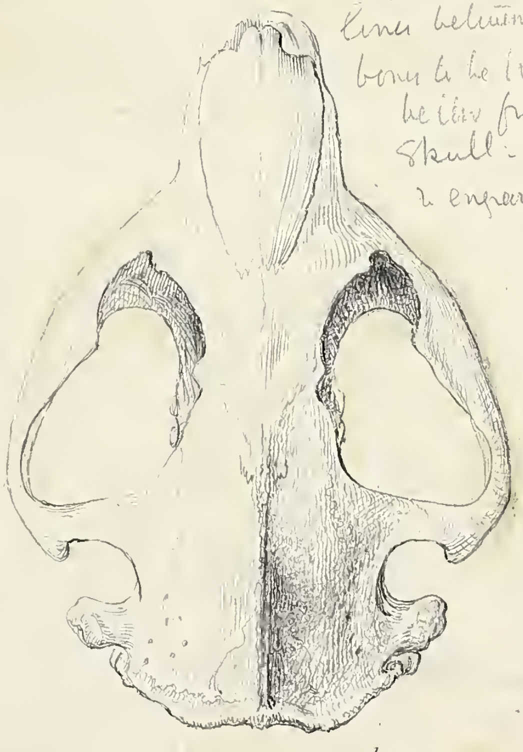


The division lines between the bones to be traced on better from the skull - Get this to engrave.



1 a



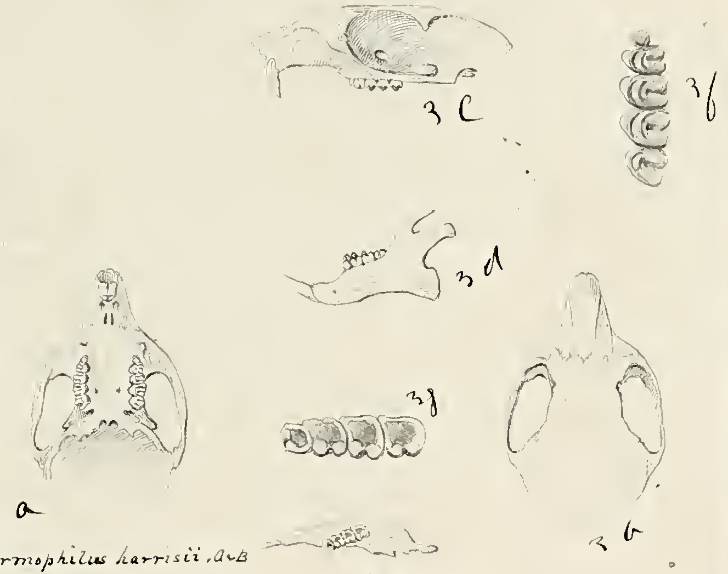


1 b

Castor fiber, americanus. ♂
1003. Rio Grande J. H. C.

J. H. Richard & R. Metzeroth 1855

1600

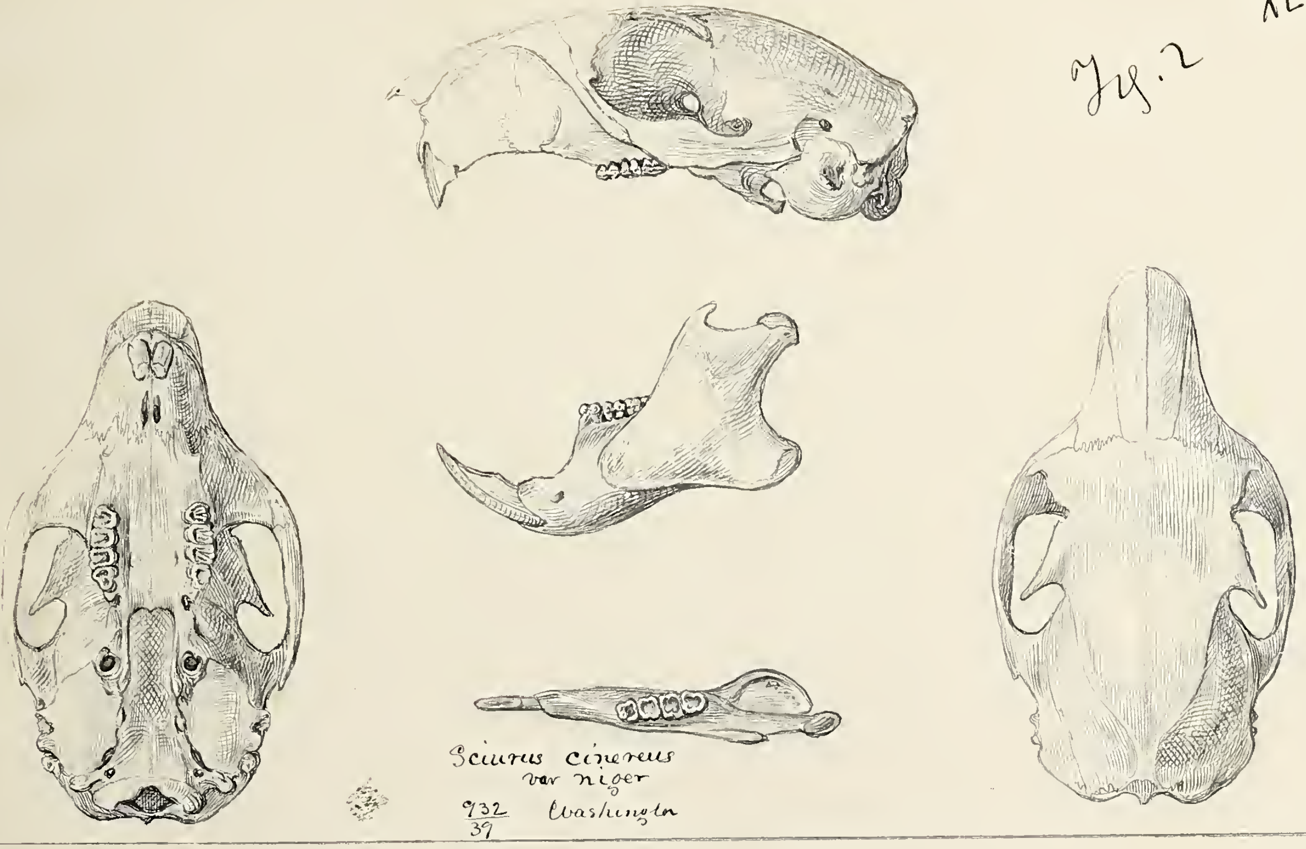


Spermophilus harrisii, A&B
1600/471 Mohave Desert.
R.S.W.

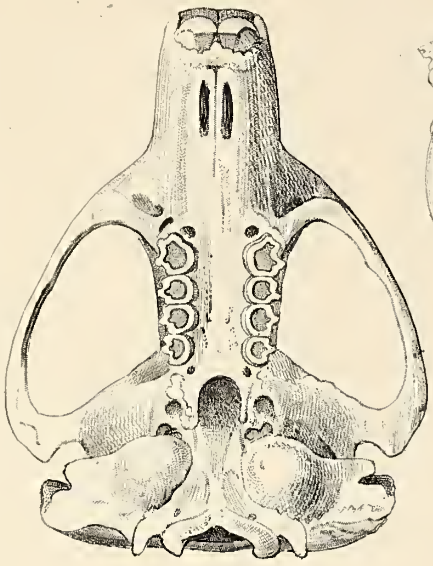
932

XLVIII

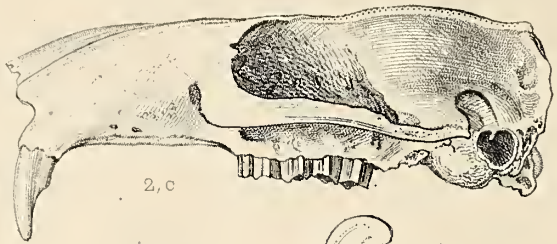
Fig. 2



Sciurus cinereus
var niger
932/39 Washington

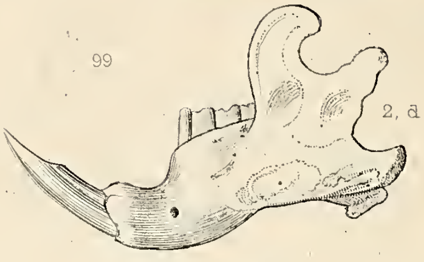


2, a

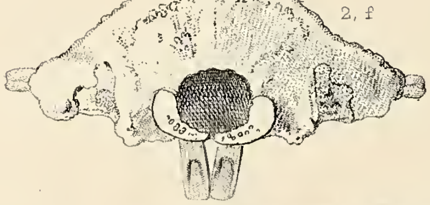


2, c

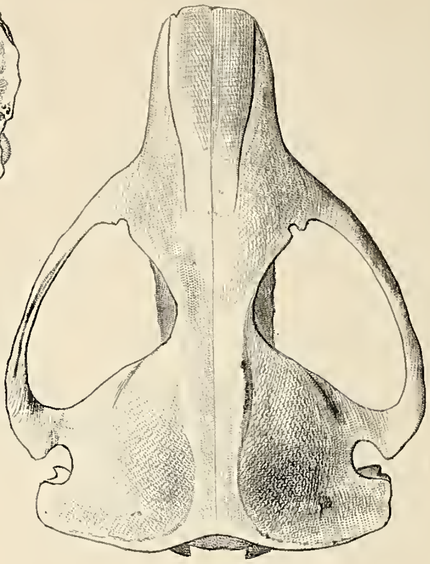
99



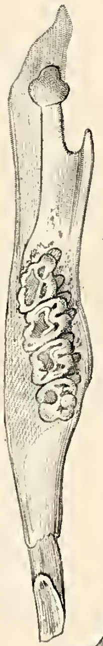
2, d



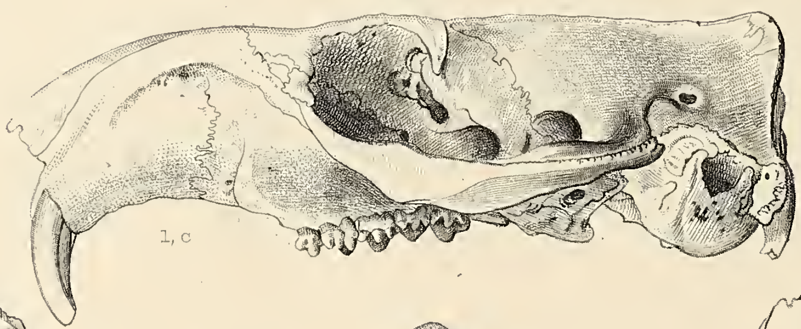
2, f



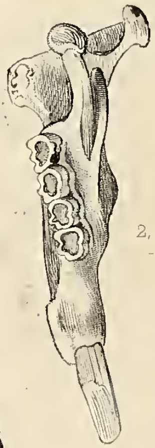
2, b



1, e

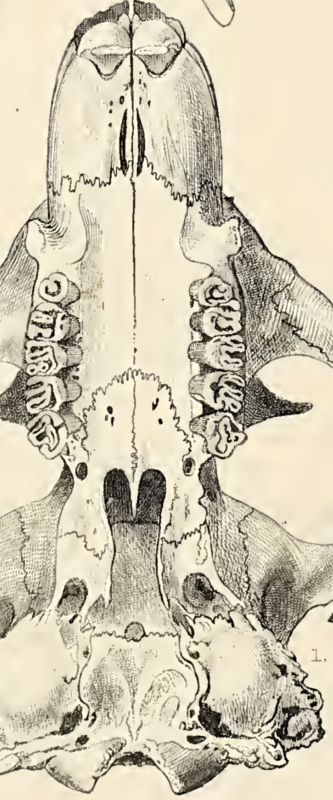


1, c

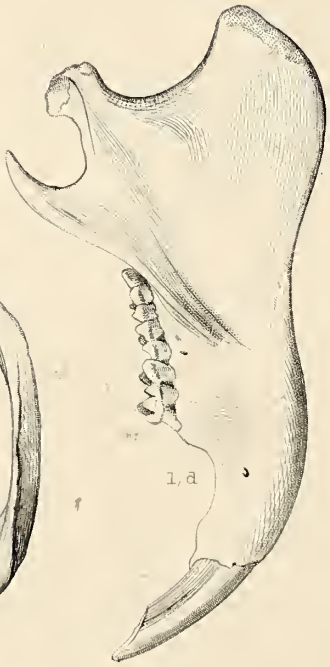


2, e

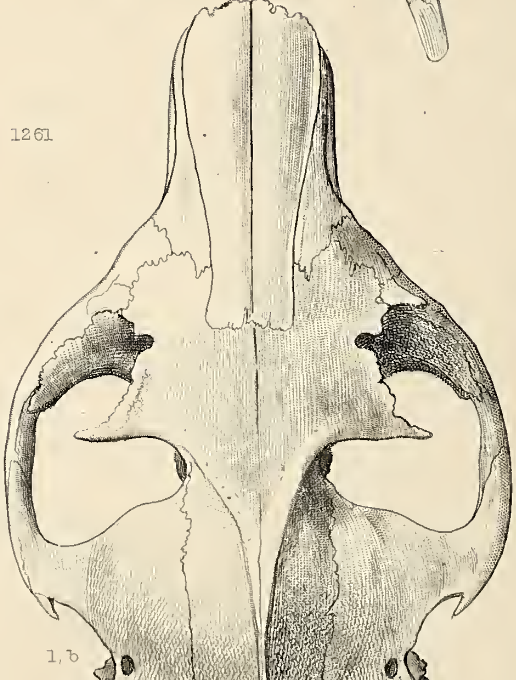
1261



1, a

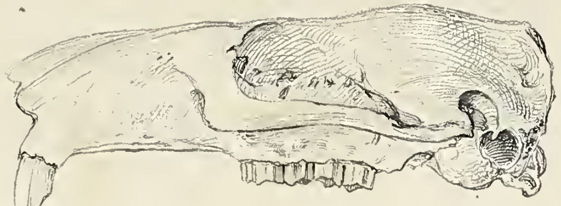


1, d

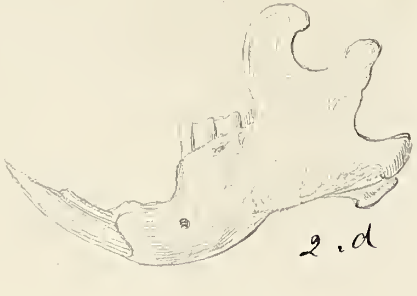


1, b

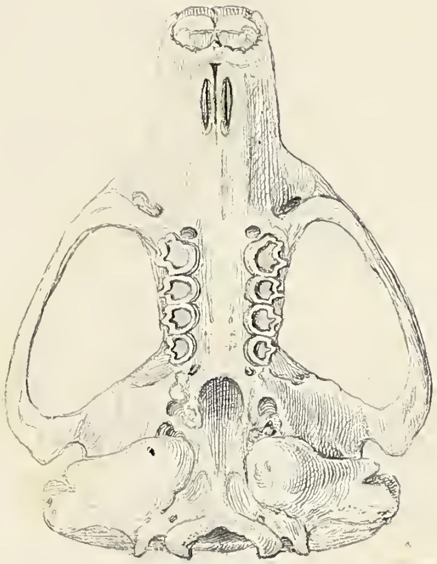
R. Metzeroth fec.



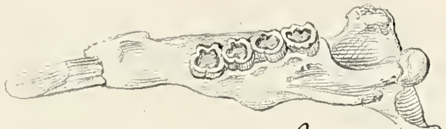
2.c



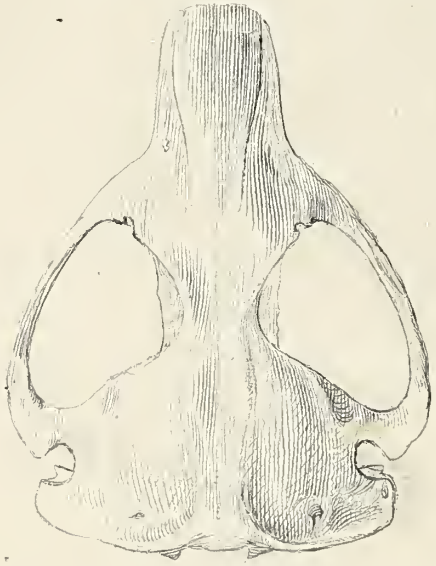
2.d



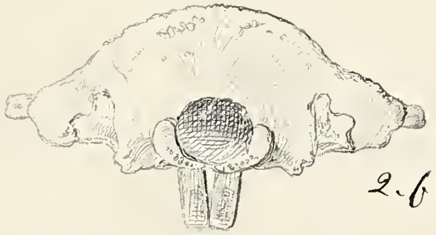
2.a



2.e



2.b



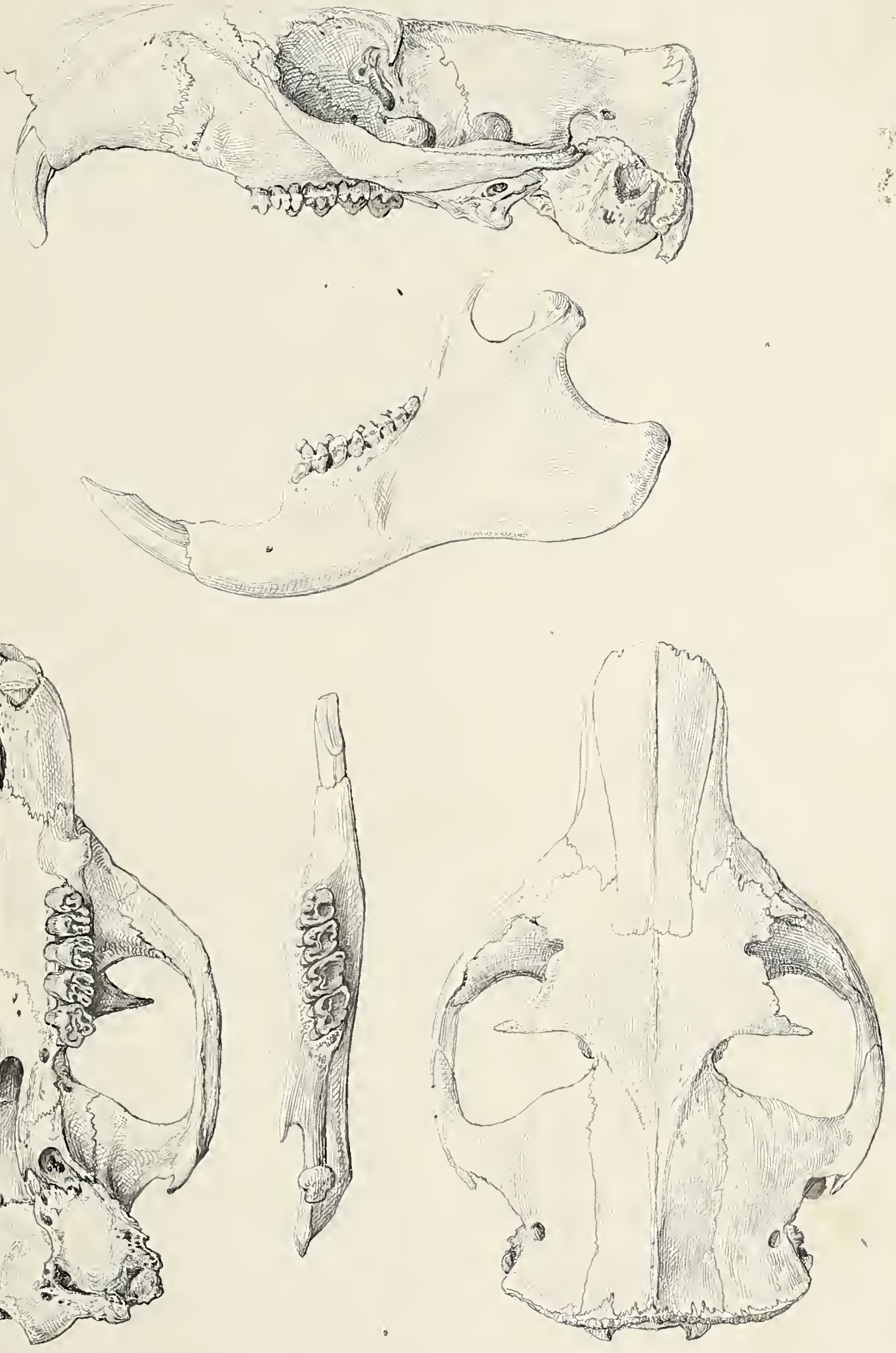
2.f.

Aplodontia leporina
Puget Sound. Ex. Ex.

XLIX 49.

XLIX

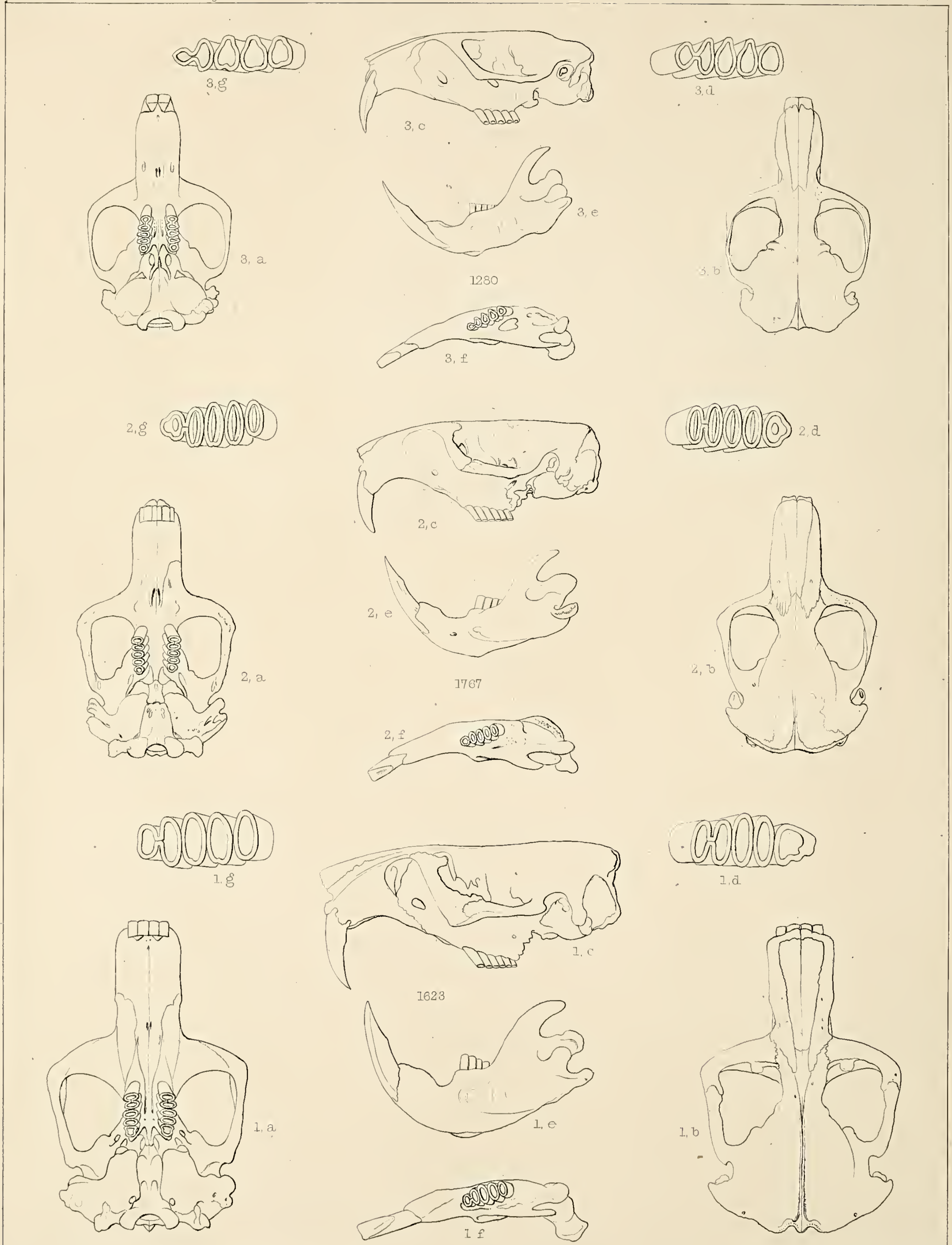
1261



Arctomys monax, L

$\frac{1261}{347}$ W. Missouri. Dr. Hoy

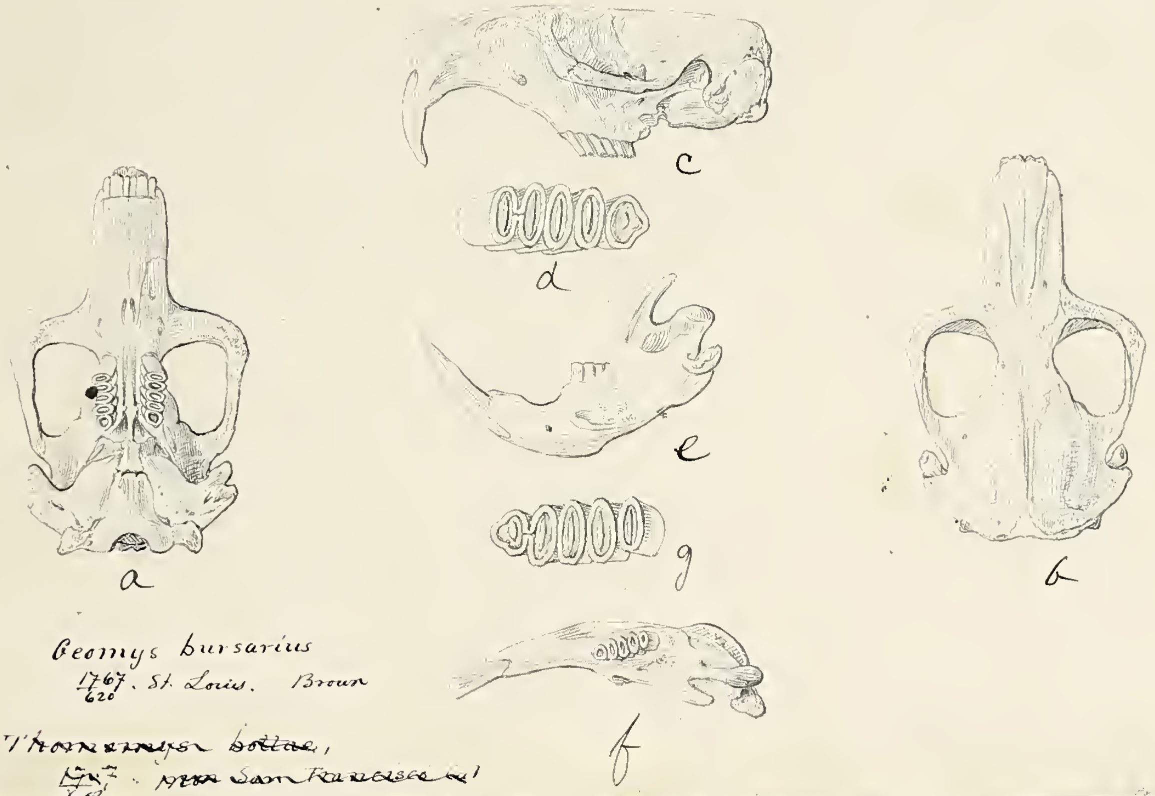
H. Richard & R. Metzeroth 1855



R. Metzeroth sc.

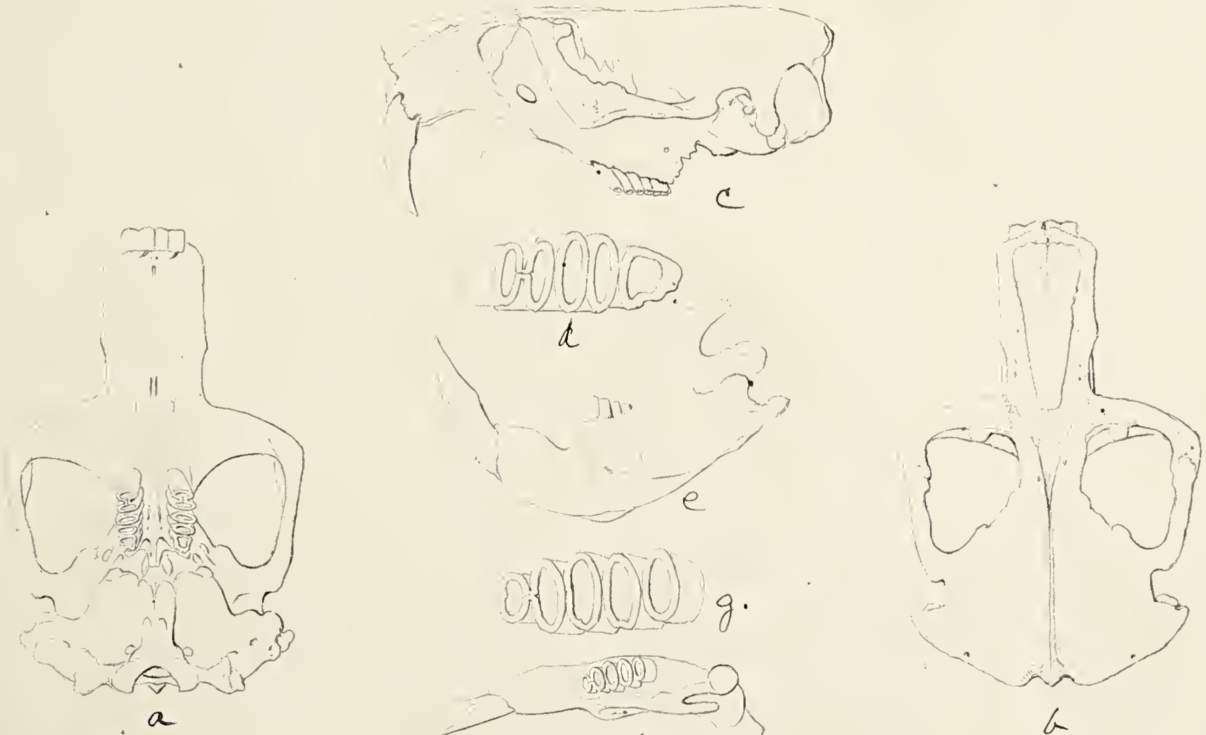
Fig. 2

I



Geomys bursarius
$\frac{1767}{620}$. St. Louis. Broun

~~Thomomys bottae,~~
$\frac{[illegible]}{603}$. ~~near San Francisco~~

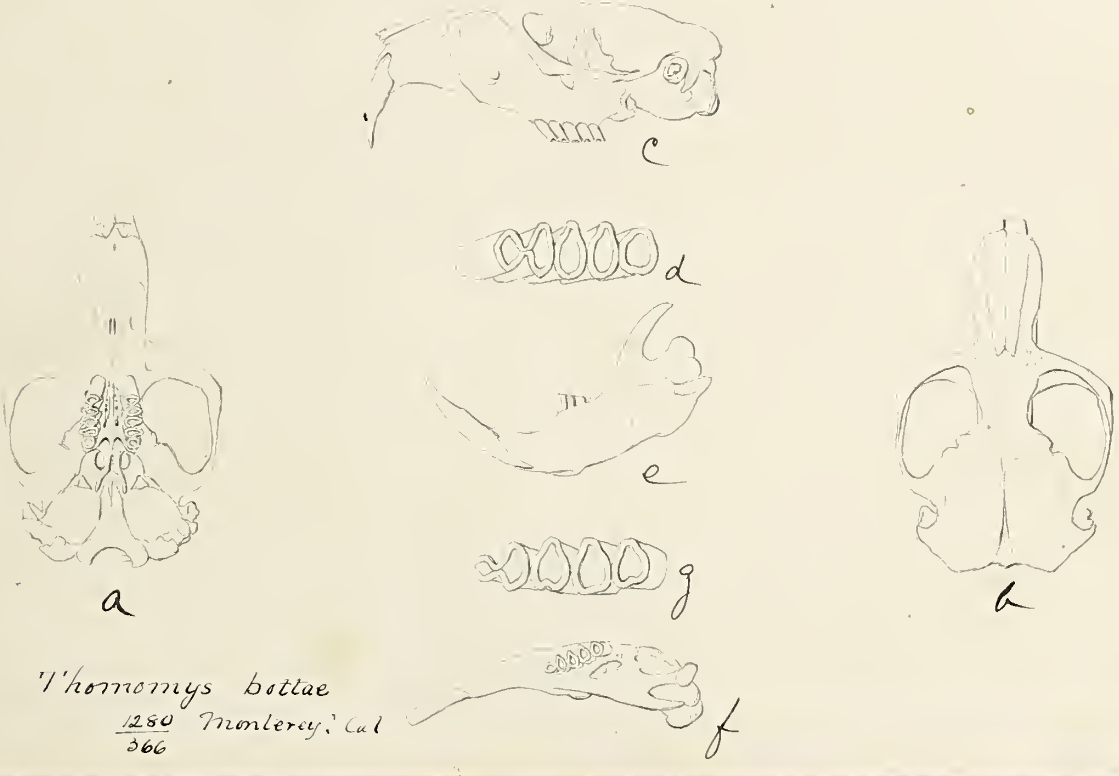


Geomys clarkii, Bd.
1623, Presidio del Norte.

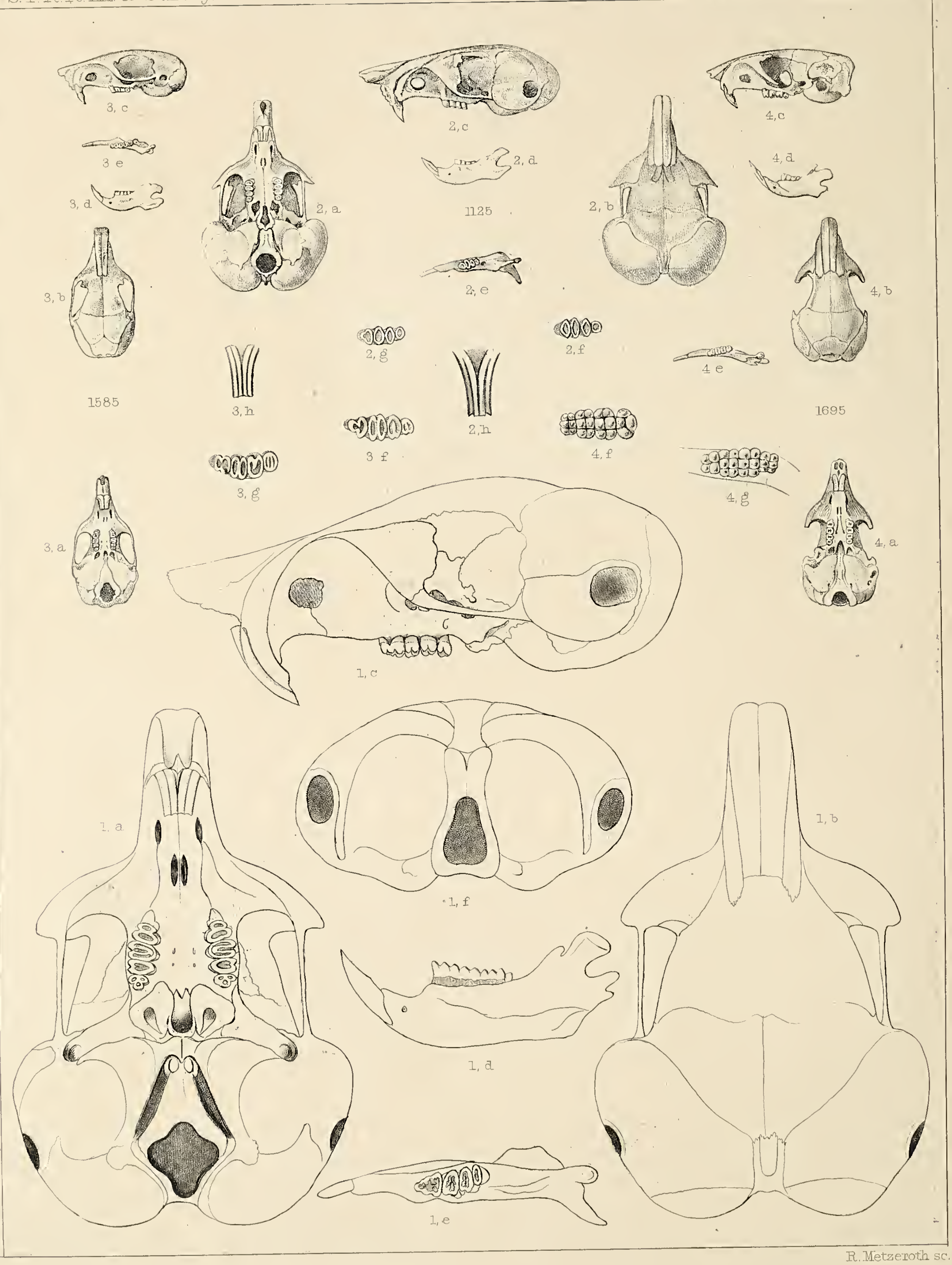
Fig 1

Fig 3

1280

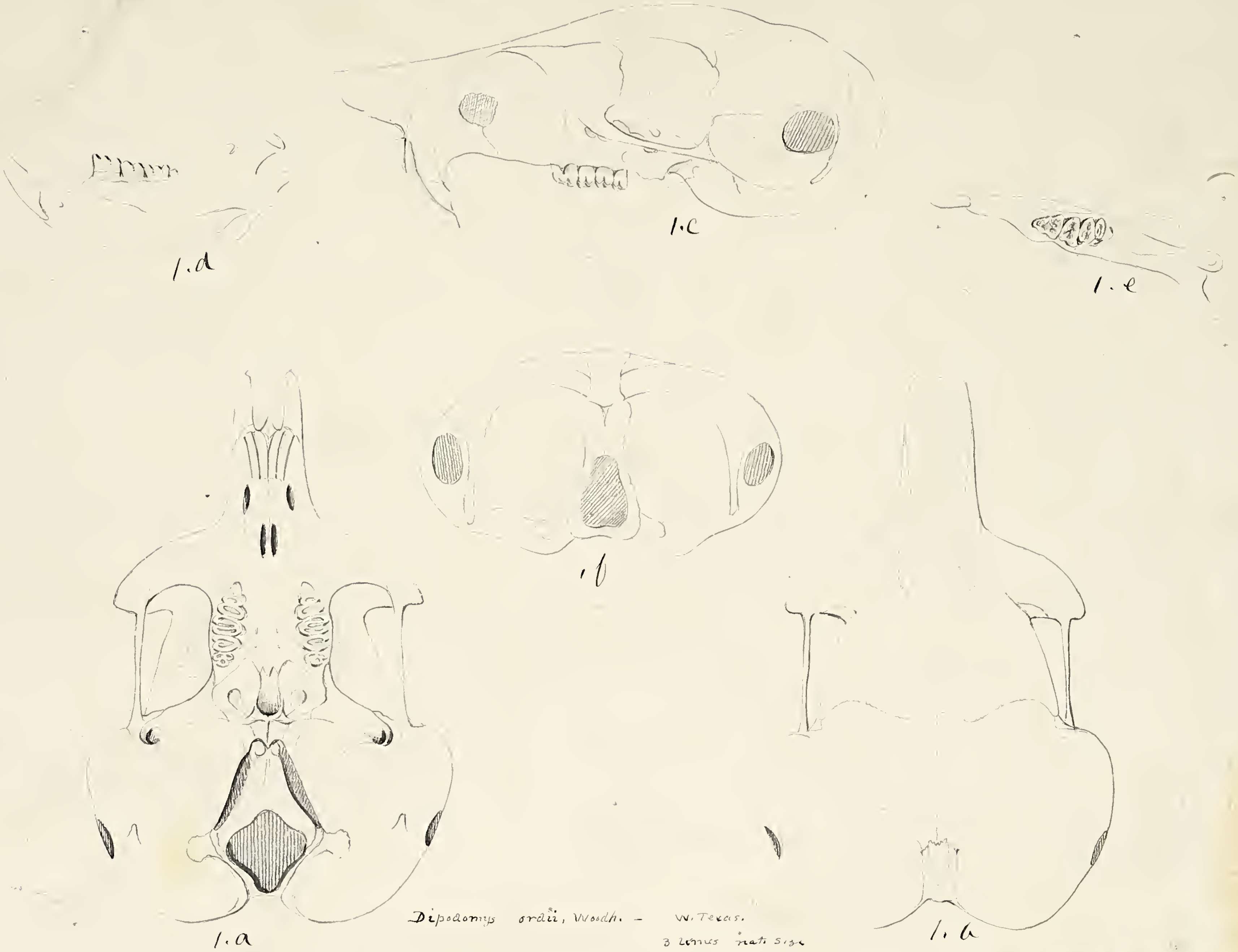


Thomomys bottae
$\frac{1280}{366}$ Monterey, Cal



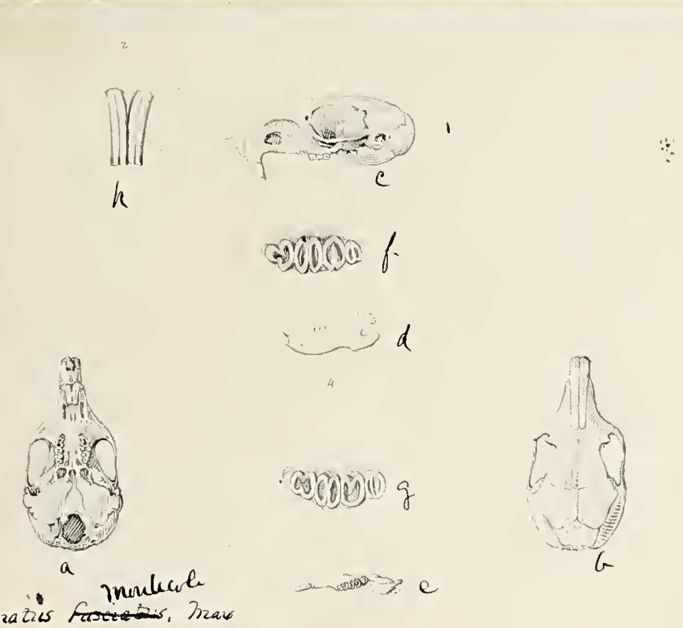
R. Metzeroth sc.

17



Dipodomys ordii, Woodh. — W. Texas.
3 times nat. size

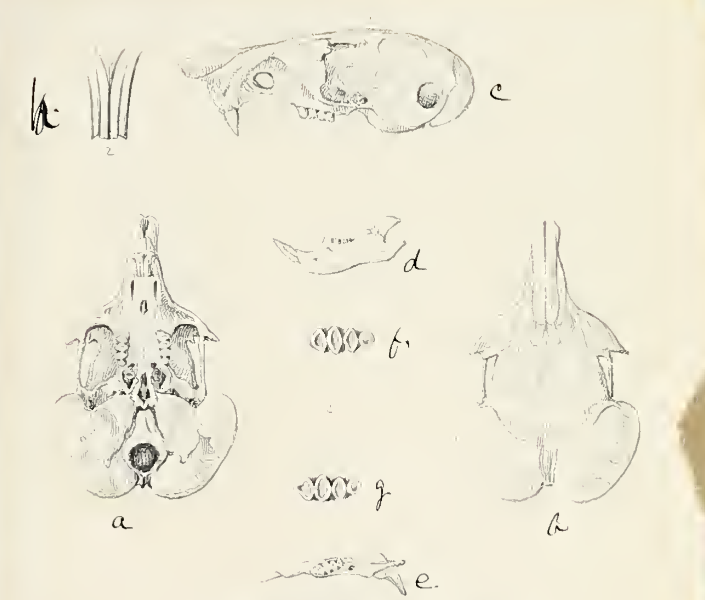
385



Perognatus ~~fasciatus~~ monticola. Max
1585/457 W. of R. Mts. Suckley.

J. H. Richard & K. Metzeroth 1855.

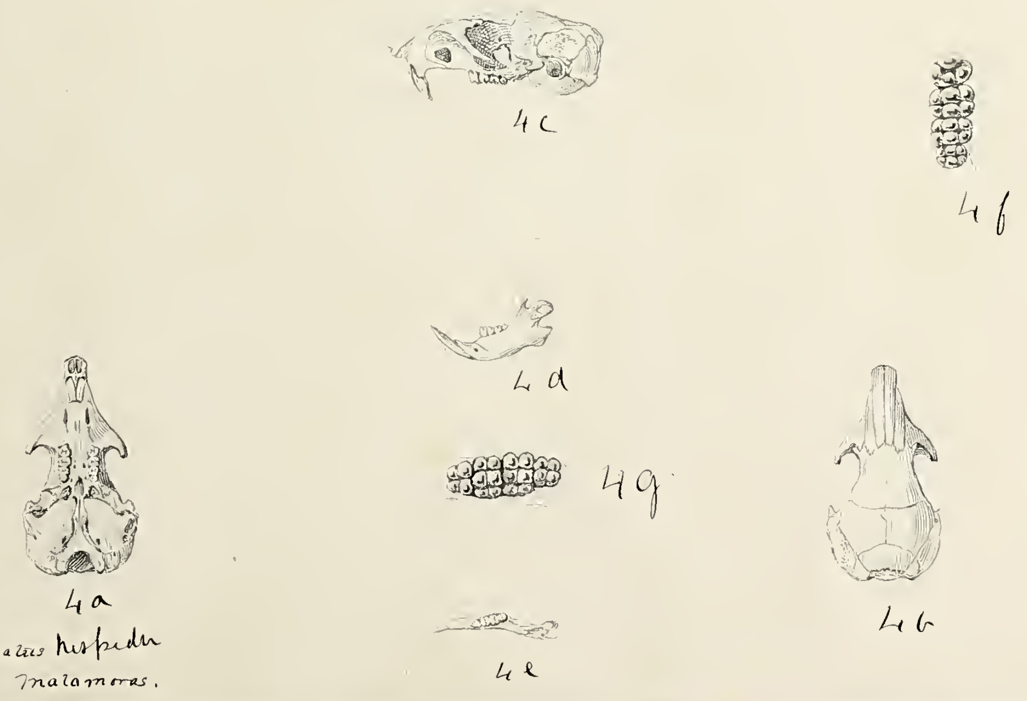
25



Dipodomys ordii. Wood.
1125/143. Sonora, Mex. J. H. C

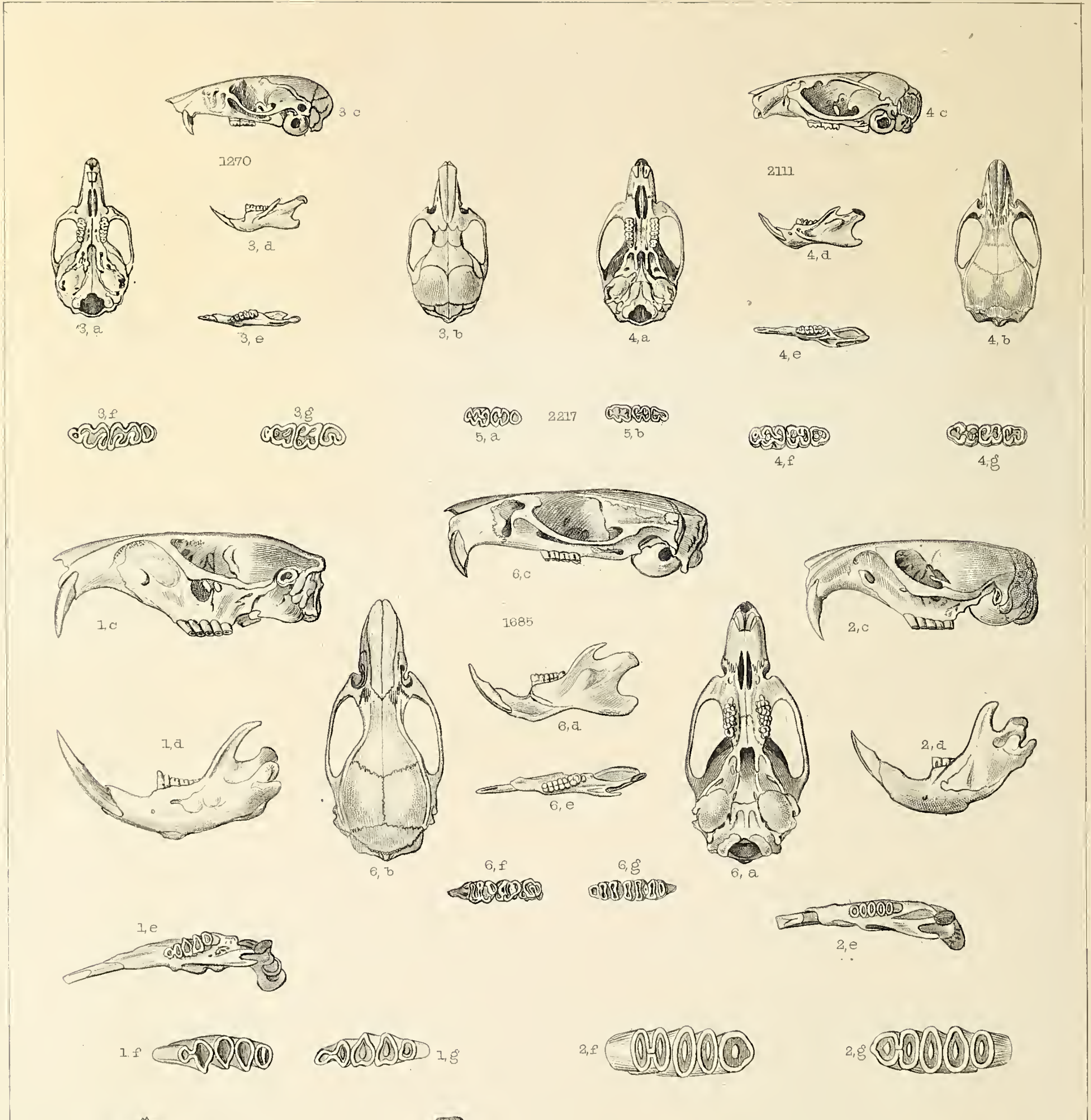
~~47~~ 41

1695.



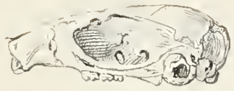
Perognatus hispidus
1695/576 ♂ Matamoras.

U. S. P. R. R. Ex. & Surveys. Mammals. — Plate III.

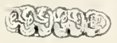


R. Metzeroth fec.

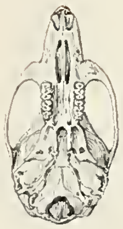
T 11.



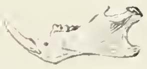
4c



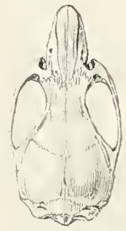
4f



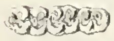
4a



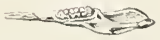
4d



4b



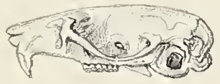
4g



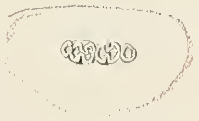
4e

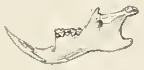
2111 H. speri[illegible]
1310 [illegible]cauty Hill
S.E

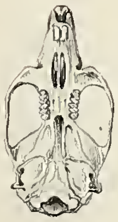
411,



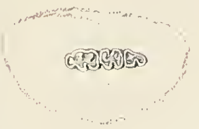
5. a

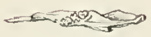


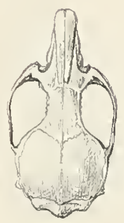




5. b.



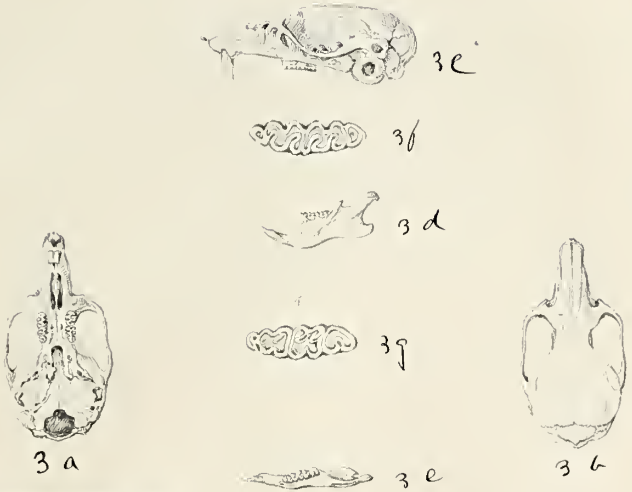




2217/1037 Hesperomys
Turkey Creek, Tex
U.S.B.C. D. R

L 11

1270

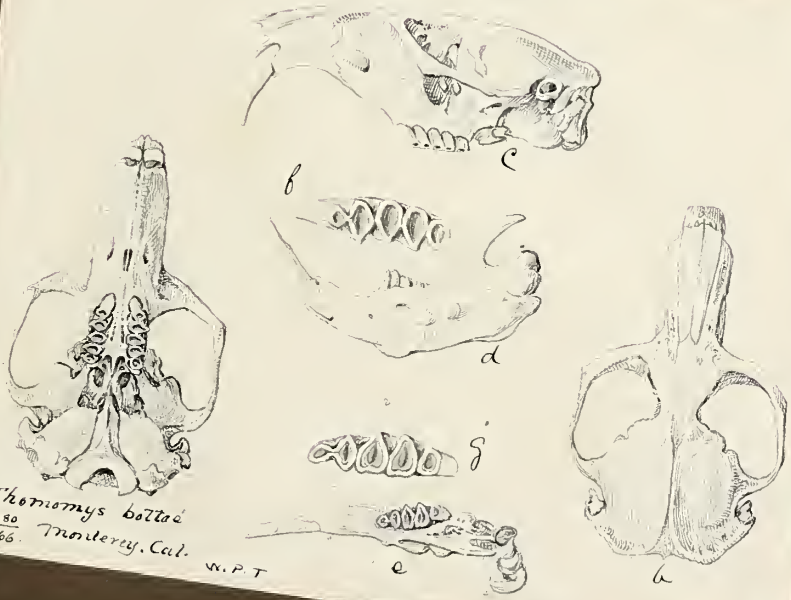


Hesperomys boylii, Bd.
$\frac{1270}{356}$ Mid. Fork, Am. Riv.

L 11

Fig. 1

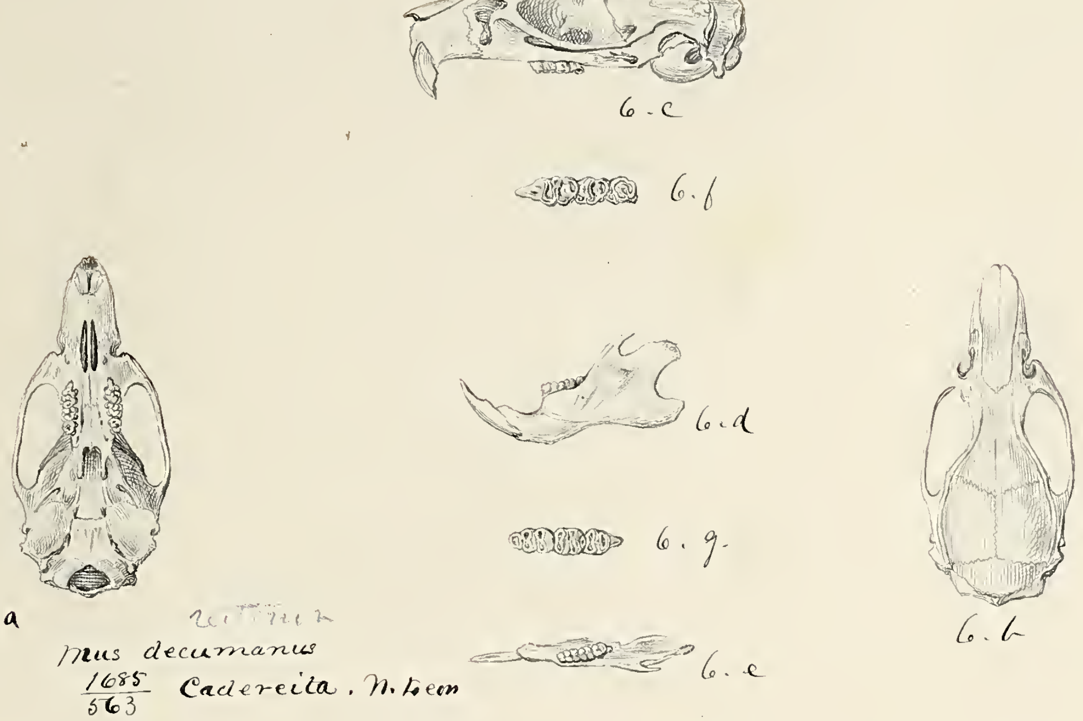
1280



Thomomys bottae
$\frac{1280}{366}$. Monterey. Cal.

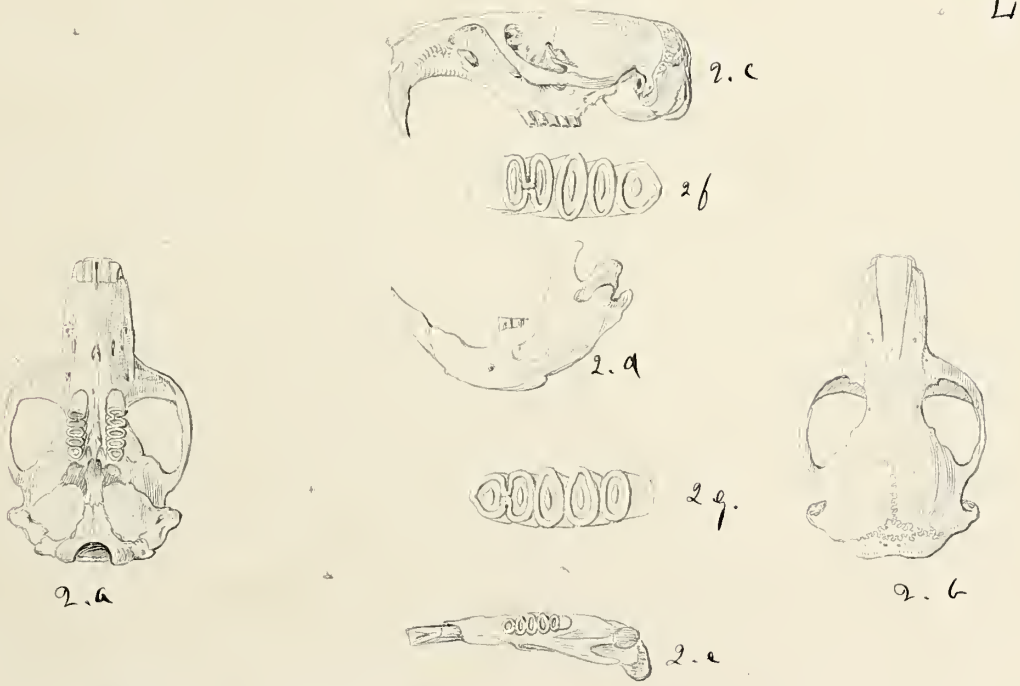
W. P. T

L 11



Mus decumanus
1685/563 Cadereita, N. Leon

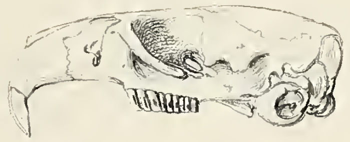
~~L~~ L 11.



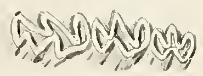
Geomys breviceps, Bd.
1138/156 Prairie Mer Rouge, La

LIII

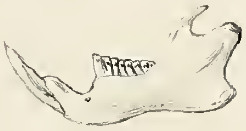
2159



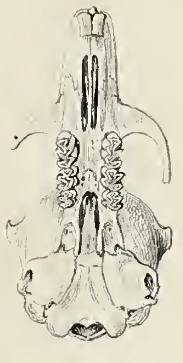
5.c



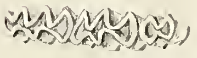
5 f



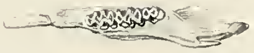
5.d



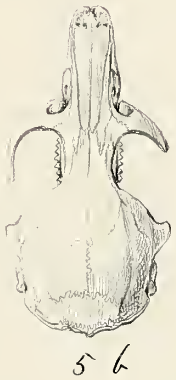
5 a



5 g

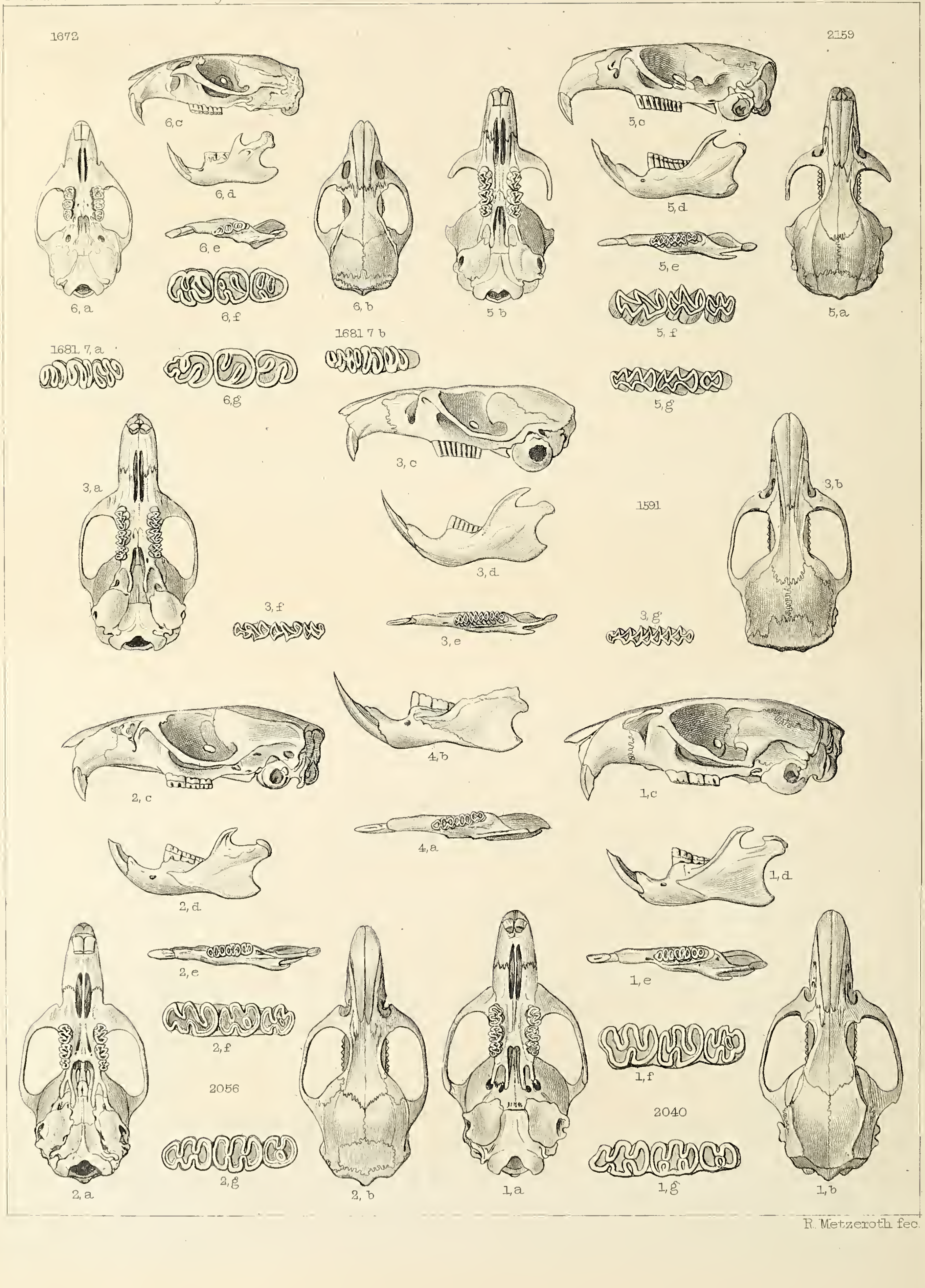


5 e



5 b

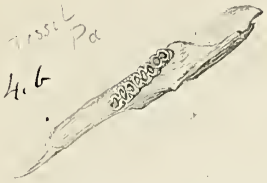
2159 / 1321 Neotoma drummondii
Fort Sarpy.
Hayden



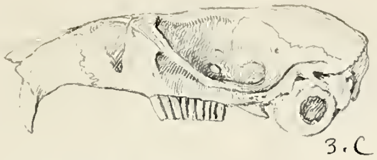
R. Metzeroth fec.

Neotoma magister, Bd.
Fossil. Carlisle Cave

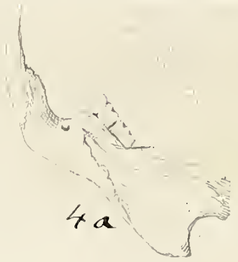
Neotoma magister 1591
Fissil. Carlisle Cave



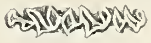
4.b



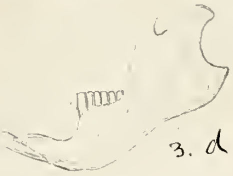
3.c



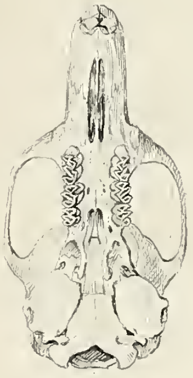
4a



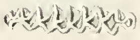
3 f.



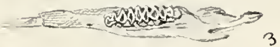
3. d



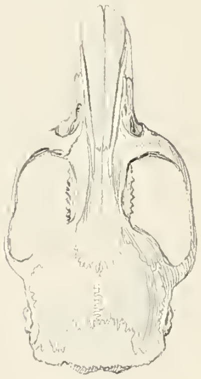
3'.a



3g.



3.-e

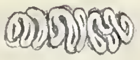


3. b

1591 Neotoma occidentalis, Cooper – Shoalwater Bay.

1672

1681

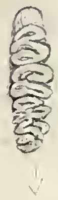


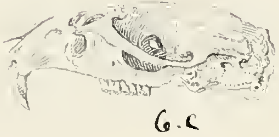
7. a

7. b

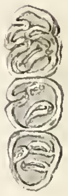
lower jaw

1681
~~[illegible]~~
~~[illegible]~~

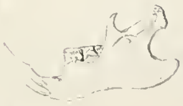




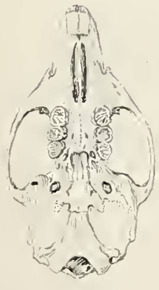
6.c



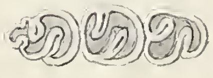
6.f



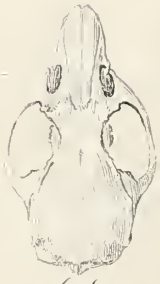
6.d



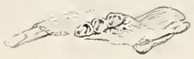
6.a



6.g.



6. b

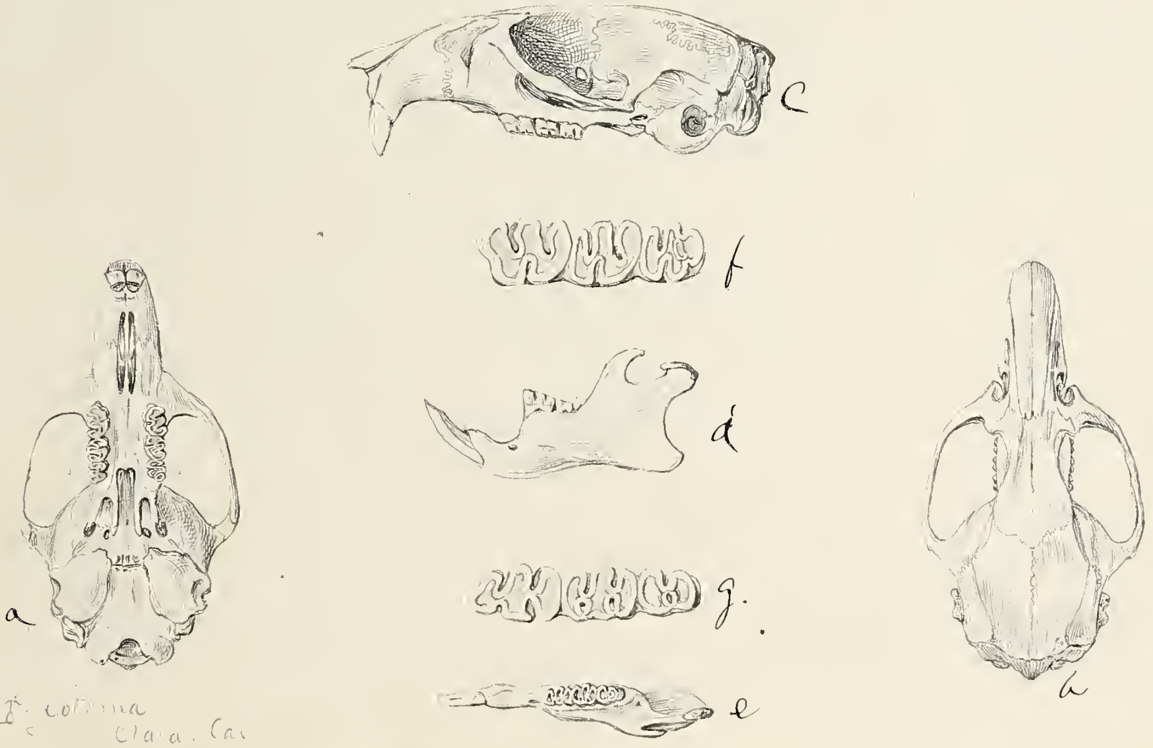


6. e

1672/8. Sigmodon berlandieri, Bd.
San ant. to El Paso.
1681/282 St°. Rosalia.

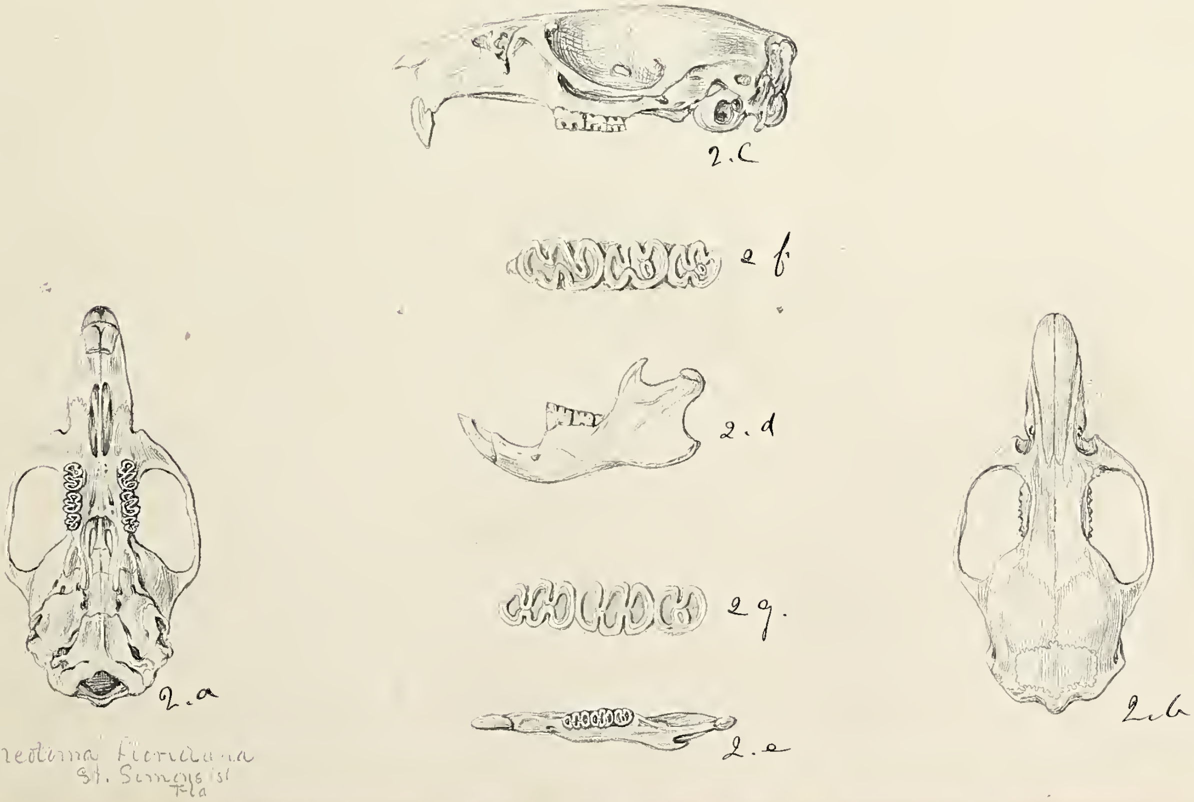
T4(11

2040



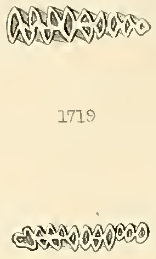
2041f. co[illegible]na
115 [illegible] Clara. Cal

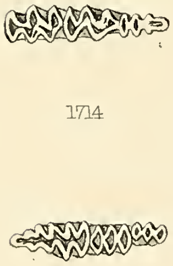
2056

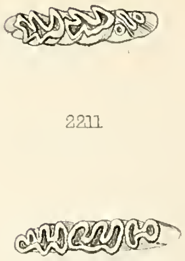


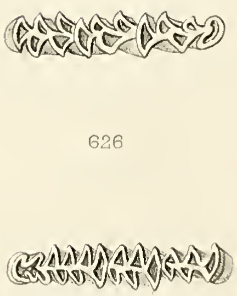
2056 Neotoma floridana
St. Simons isl
Fla

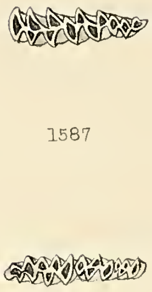
Ne

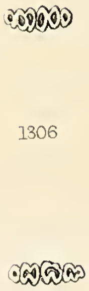

1719

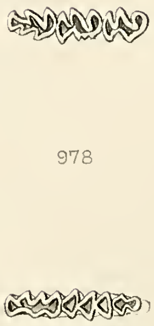

1714

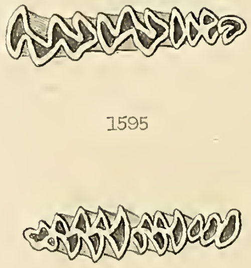

2211

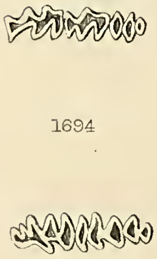

626

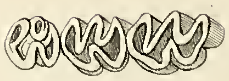

1587

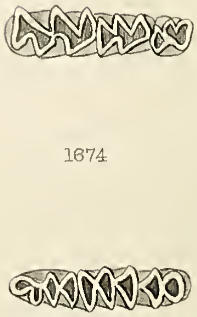

1306


978


1595

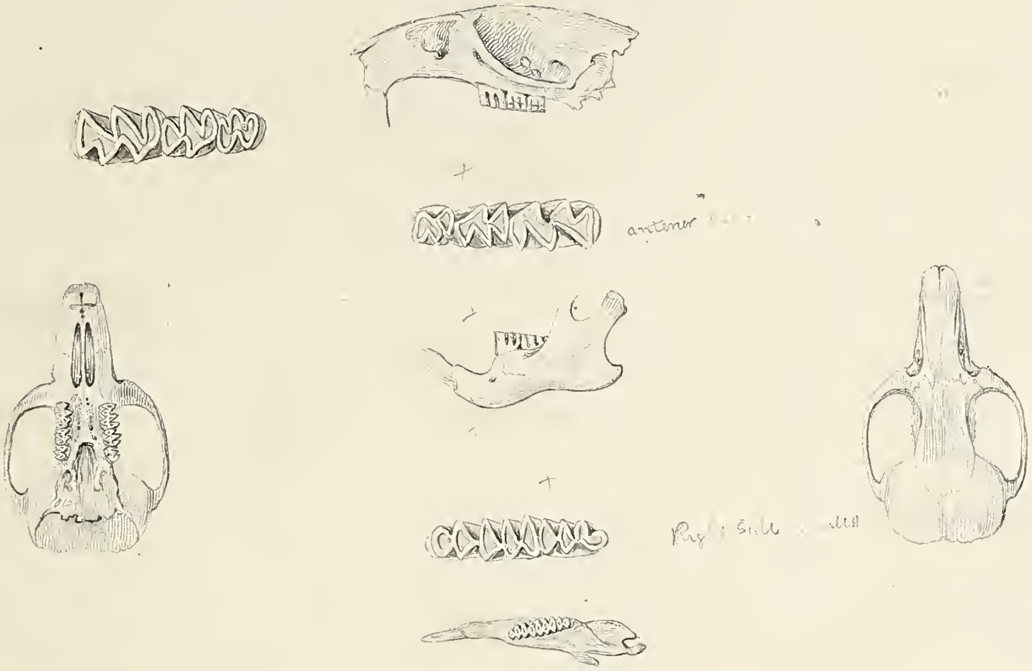

1694


939


1674

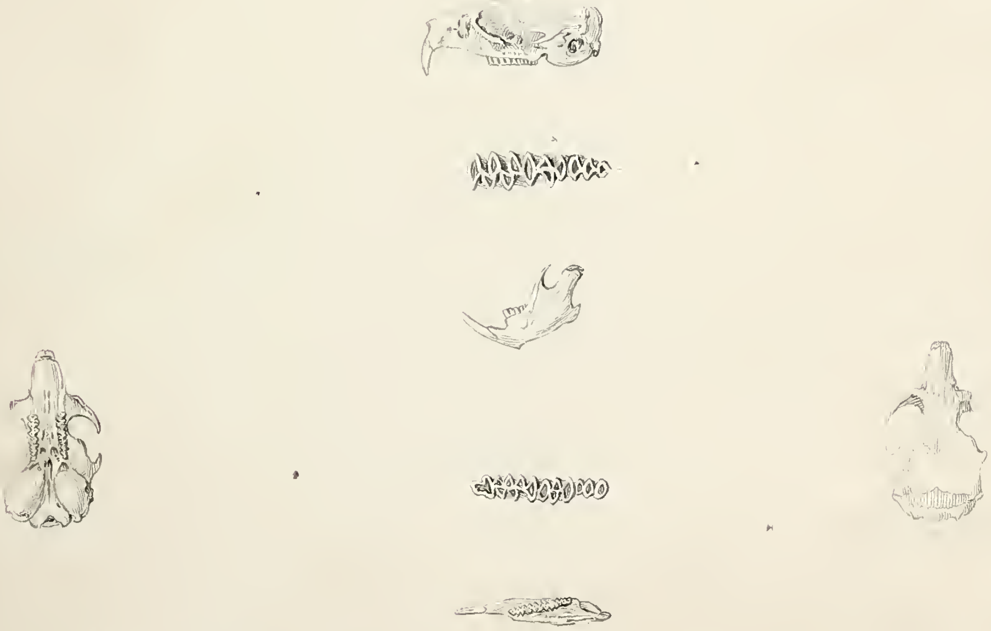
R. Metzeroth fec.

1674



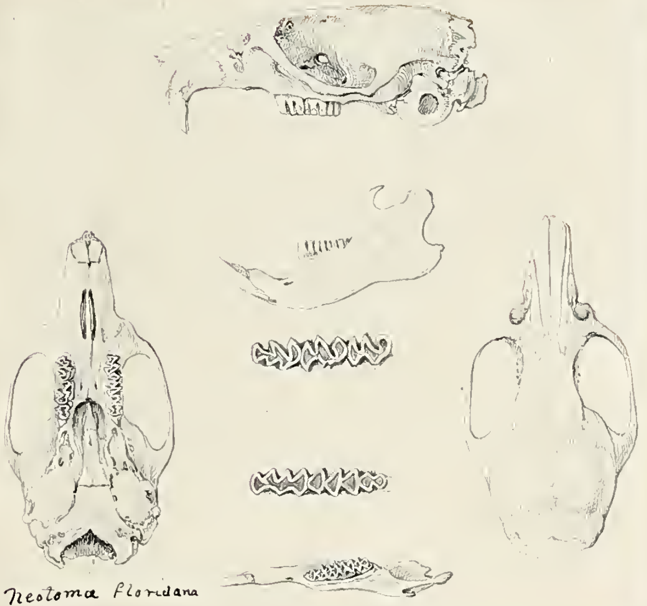
Neotoma mexicana, Ba

1719.



Arvicola pinetorum
$\frac{1719}{596}$ *Georgia*

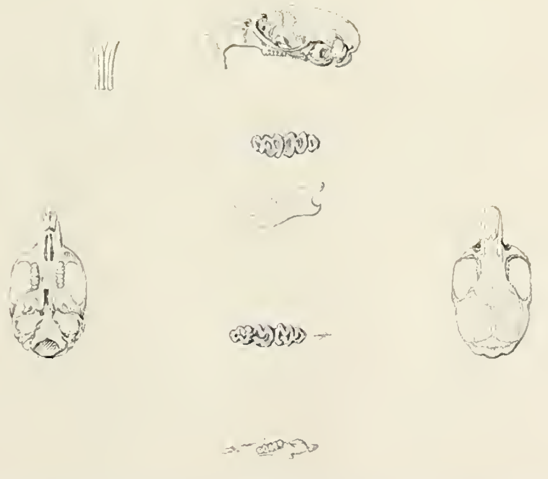
975



Neotoma floridana
$\frac{978}{82}$ Charleston, S. C.

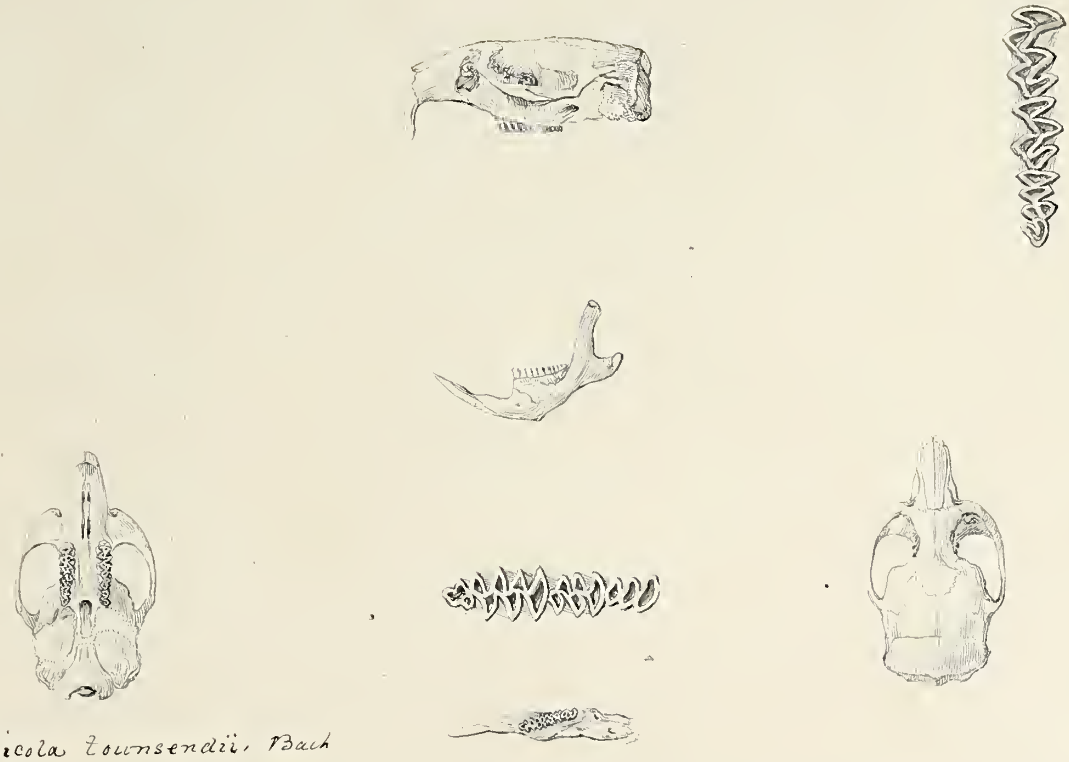
975

1306

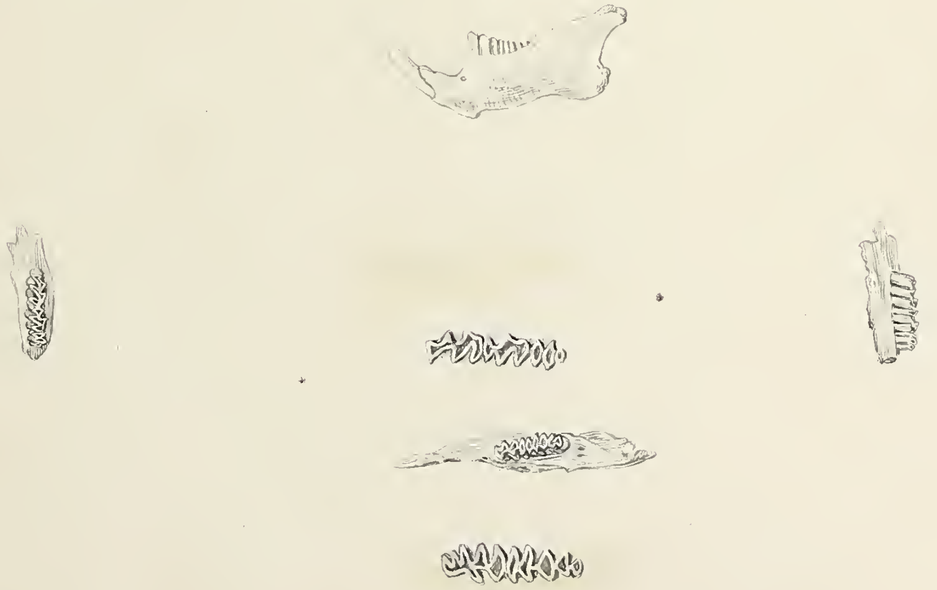


$\frac{1306}{441}$ Reithrodon montanus, Bd. R. Mts

1595.

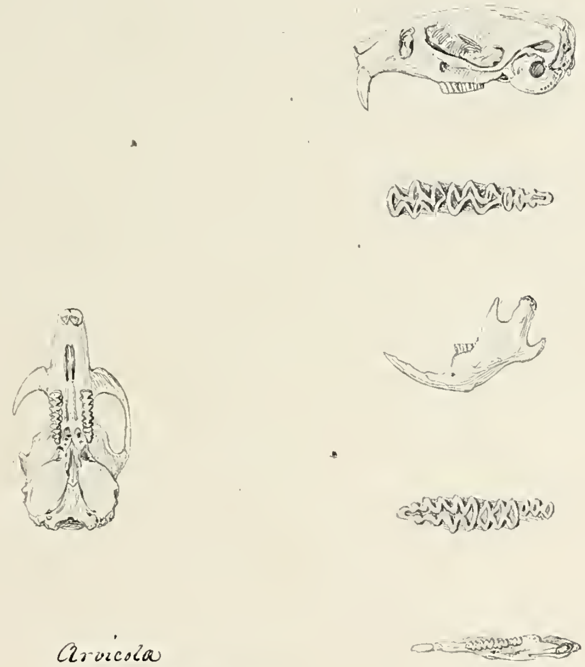


Arvicola townsendii, Bach
1595/464 Shoalwater Bay. W.T

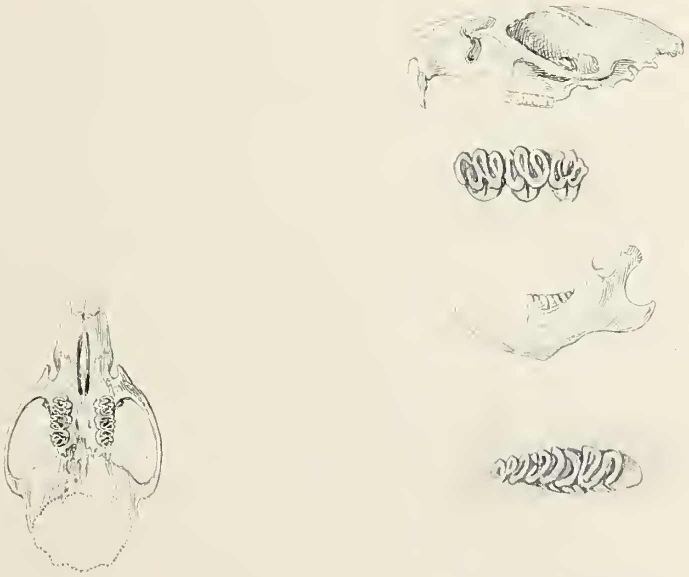


1694/224 *Neotoma drummondii,*
Milk River, Neb. Skeleton

1714.

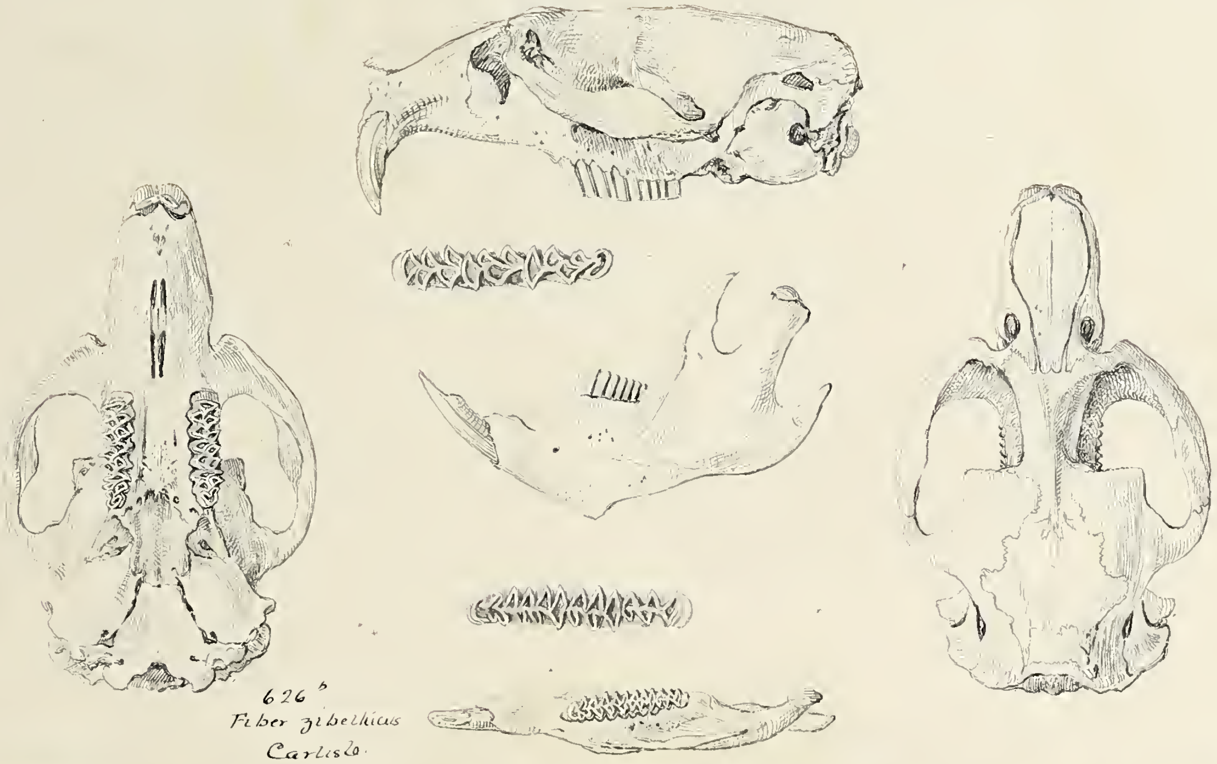


Arvicola
$\frac{1714}{591}$ ♂ Pembina.
Cantlee.



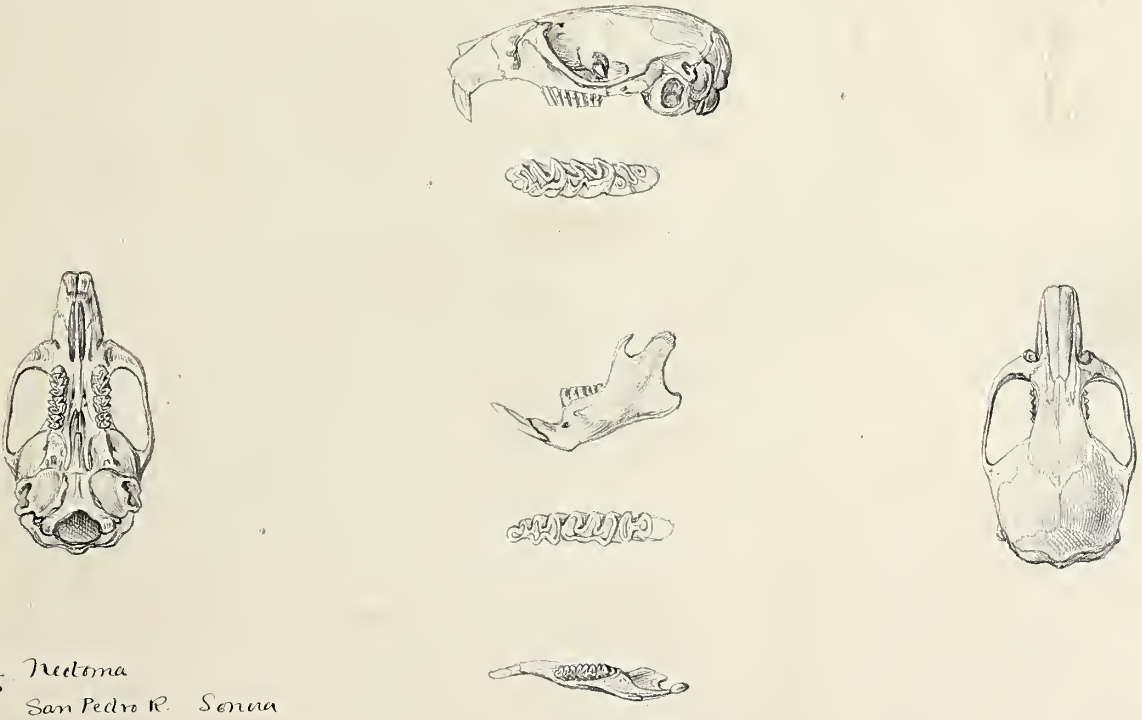
$\frac{1675}{281}$ Sigmodon hispidum, Say. Georgia

not on Pl. 54.



626b
Fiber zibethicus
Carlisle.

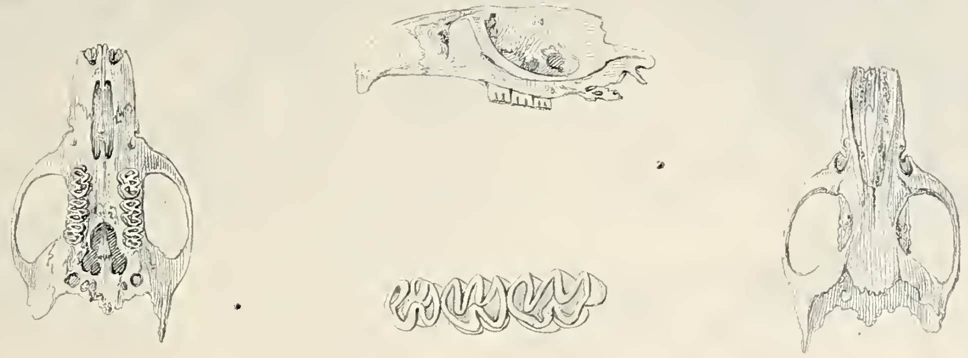
2211



2211
1833 Neotoma
San Pedro R. Sonora
Dr. K.

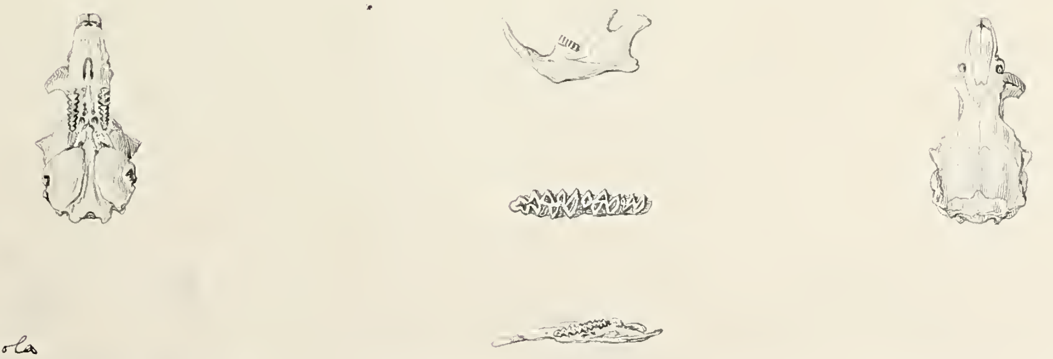
N. M. July 13th /56. No. 4

939

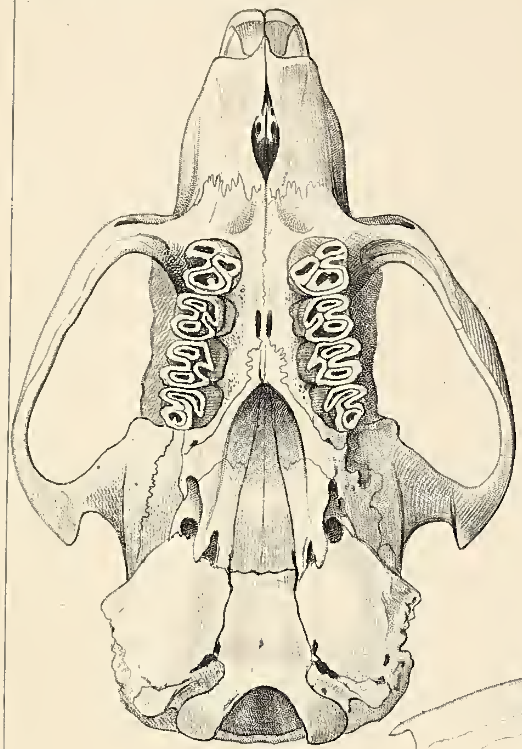


939. Neotoma California Hutton. Los Angeles.
no skin

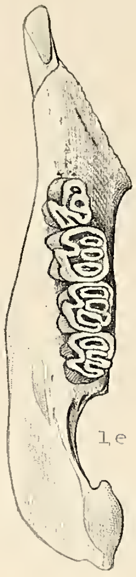
1587.



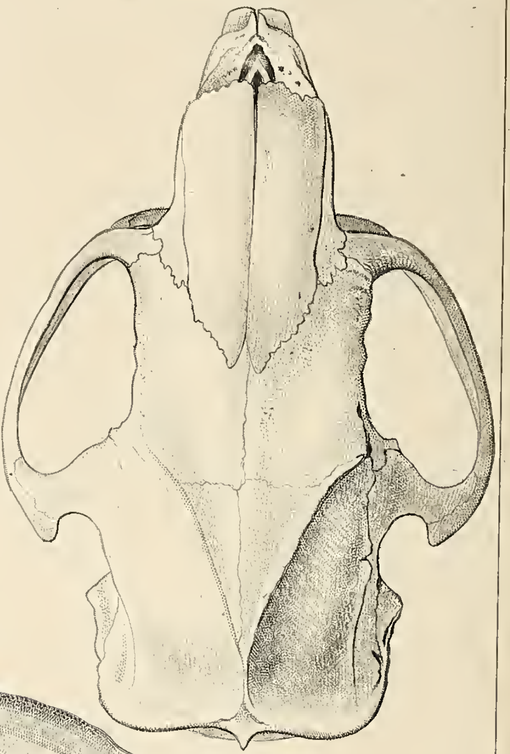
Arvicola
1587/453 ♂ Calcasieu. La



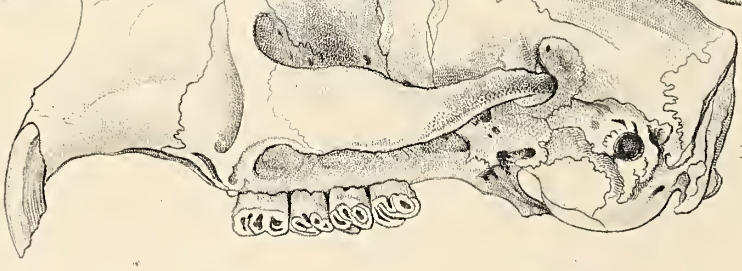
1, a.



1, e

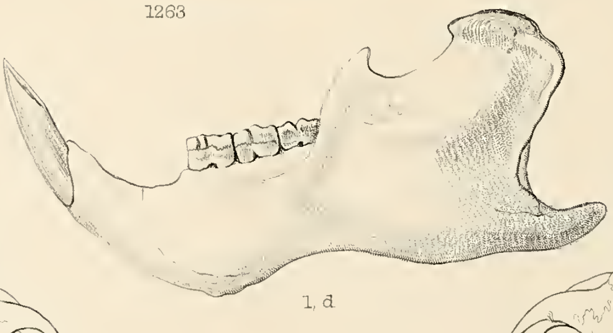


1, b

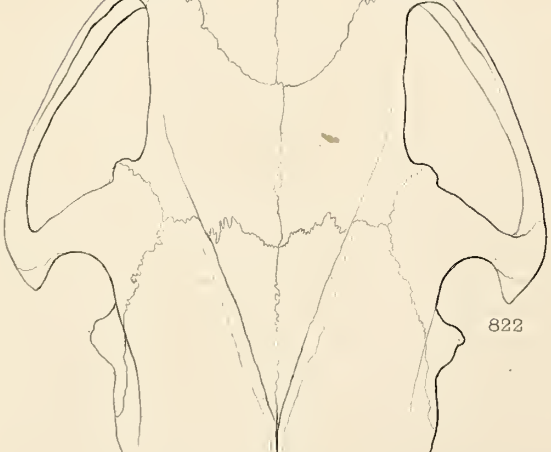


1, c

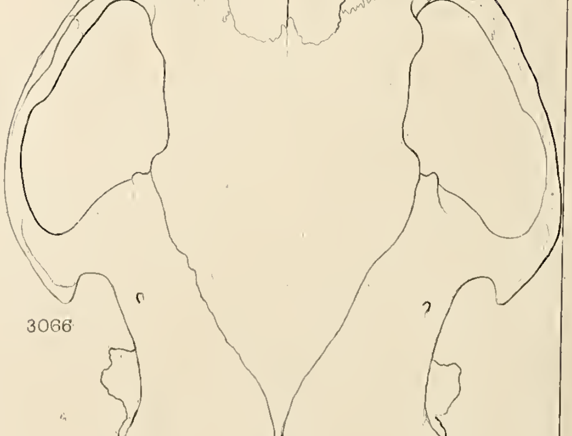
1263



1, d



822



3066

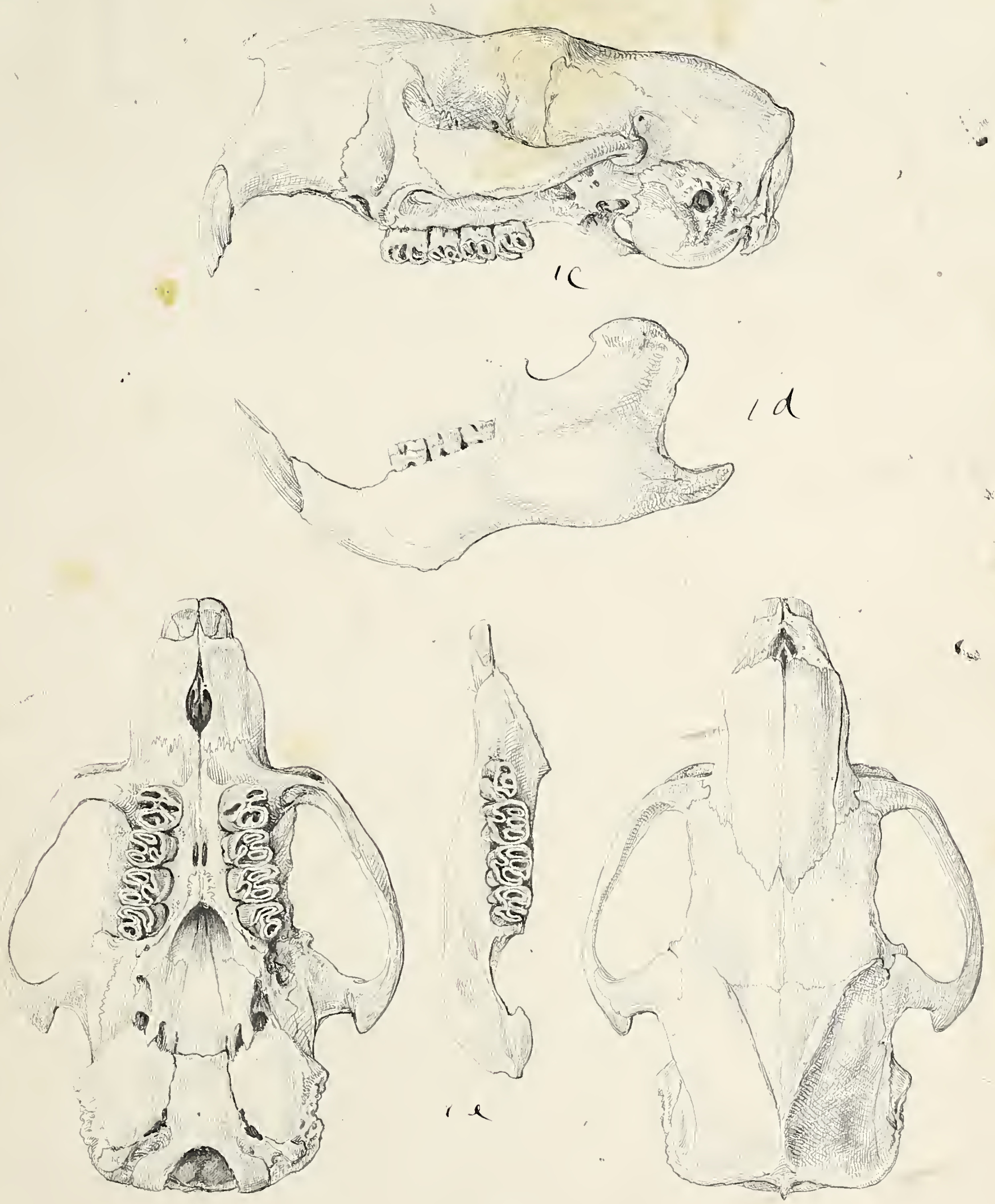
R. Metzeroth sc.

a b d. for plate

Fig 1 3066.
view from above.

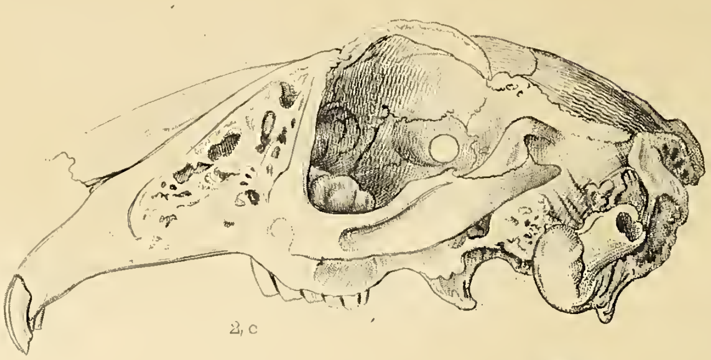
Fig 2

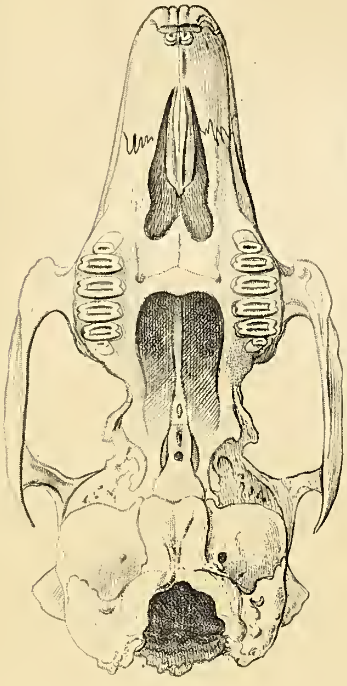
4 V.



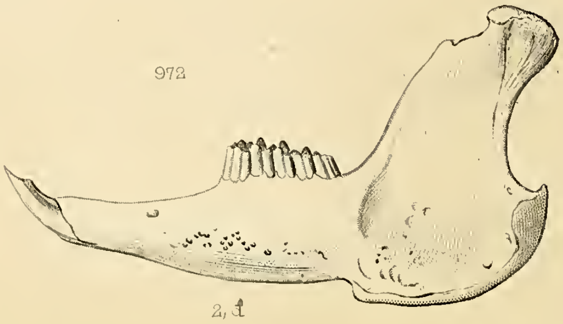
Erethizon
1263/349 Bill Williams Fork.
A.W.V.

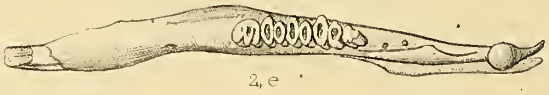
[illegible]

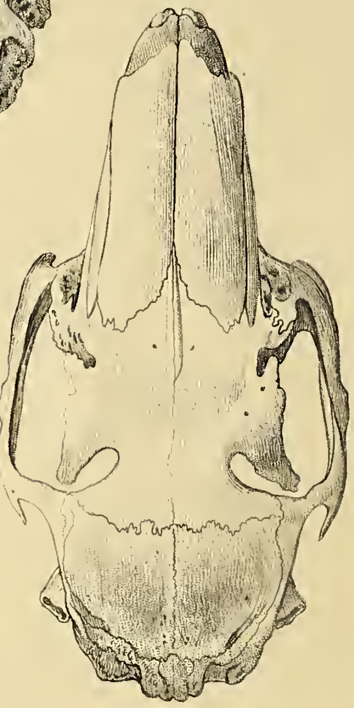

2, c

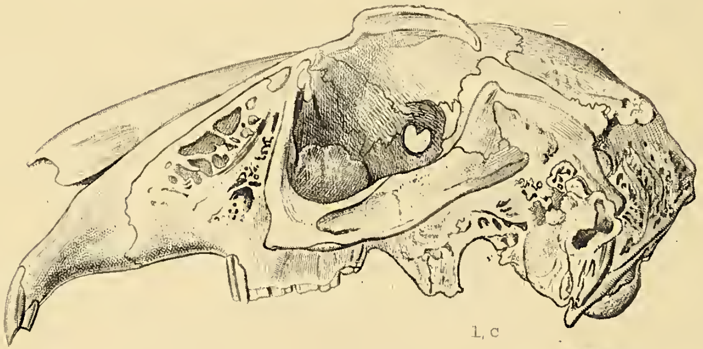

2, a

972

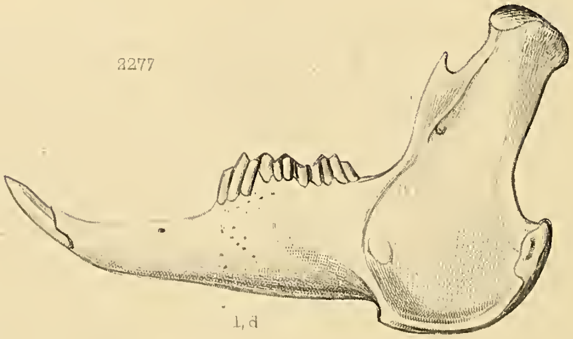

2, d

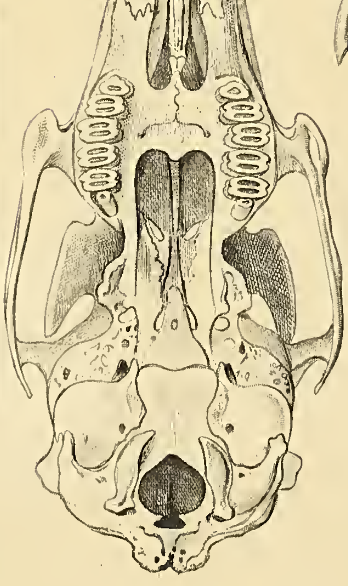

2, e

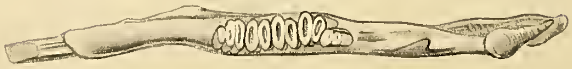

2, b

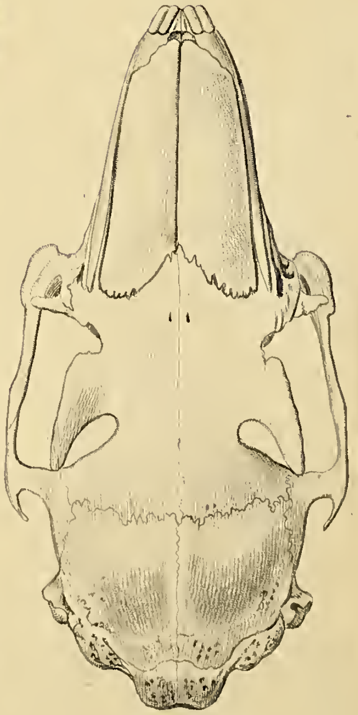

1, c

2277


1, d


1, a


1, e

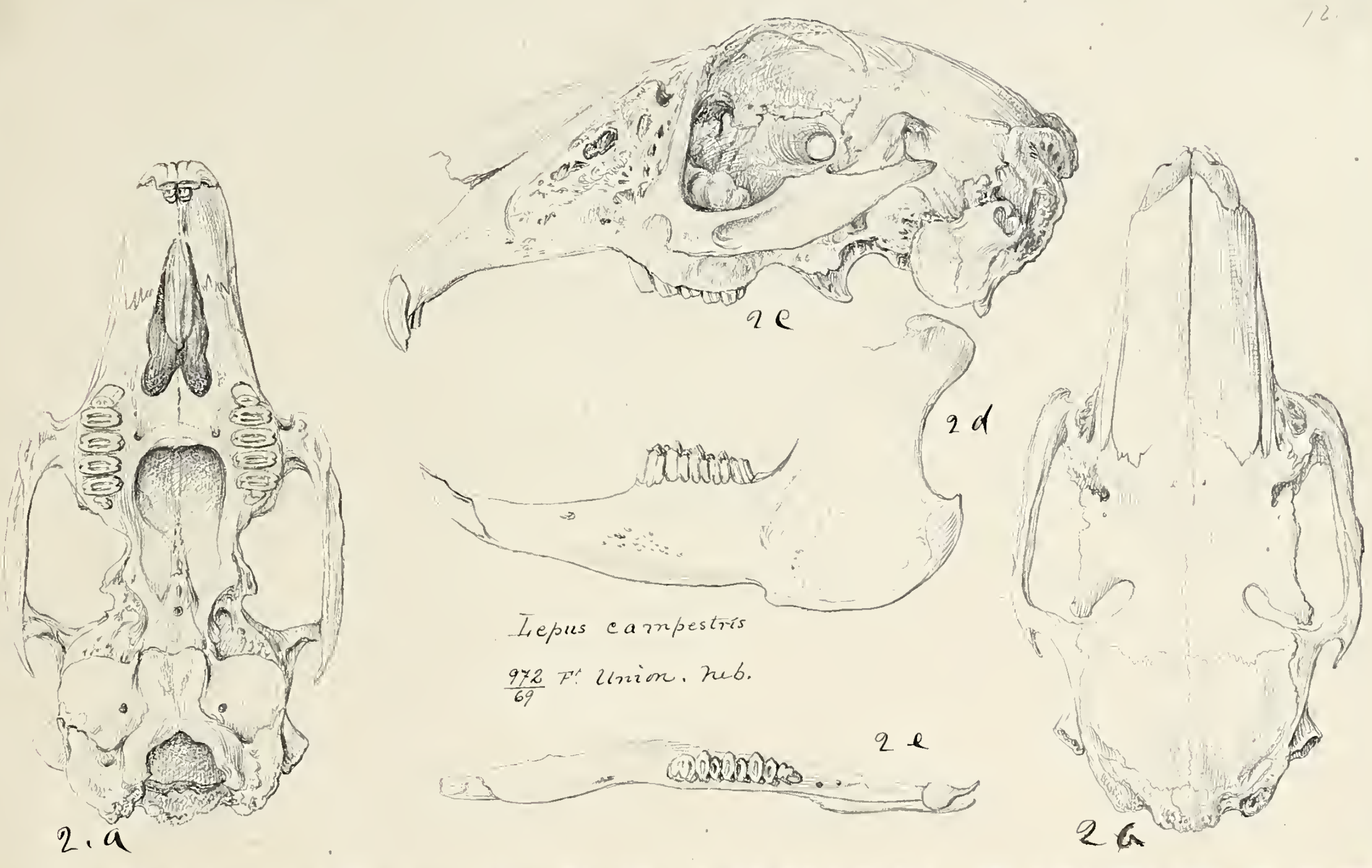

1, b

R. Metzeroth fec.

2

LVI

12

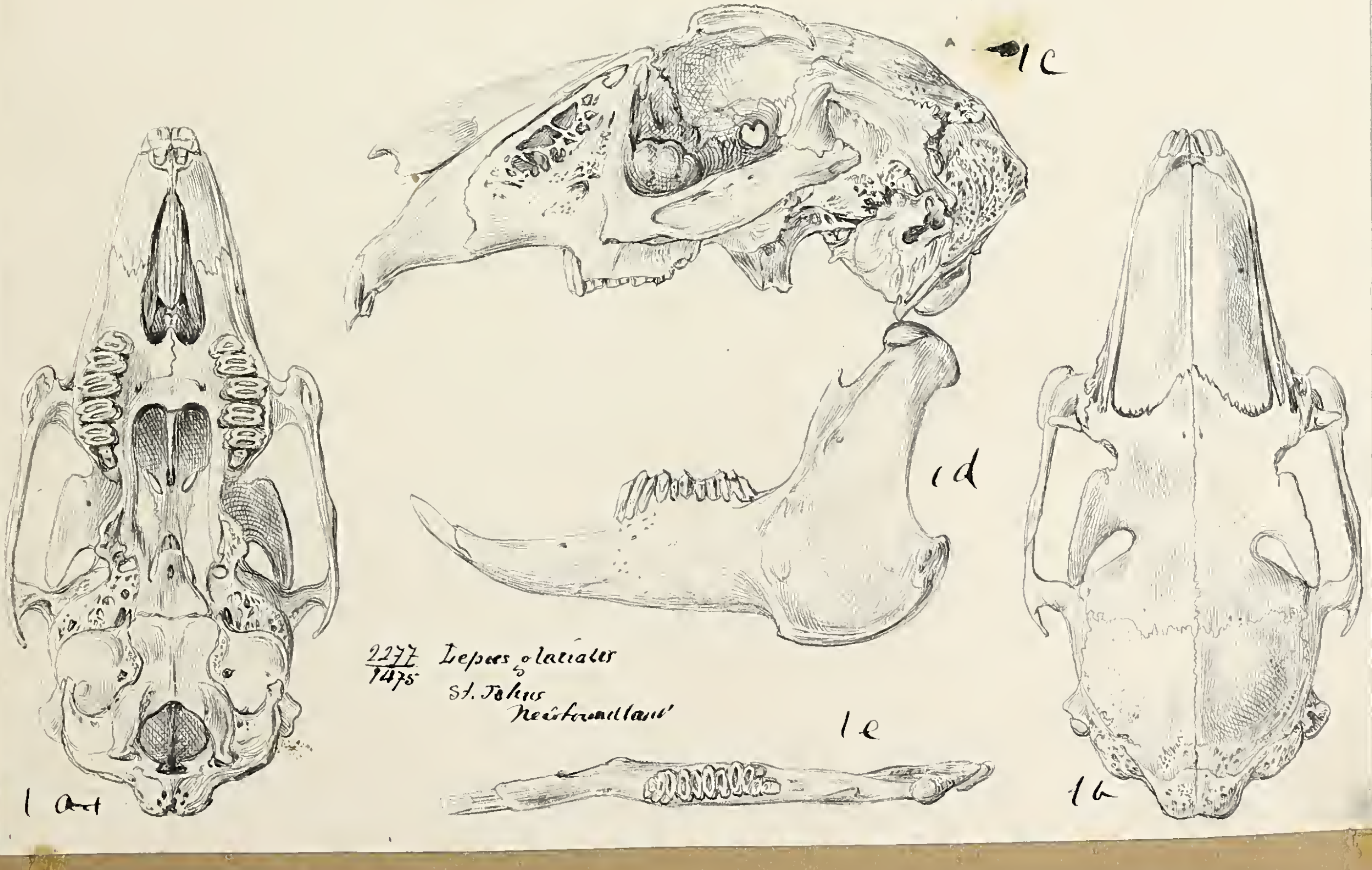


Lepus campestris

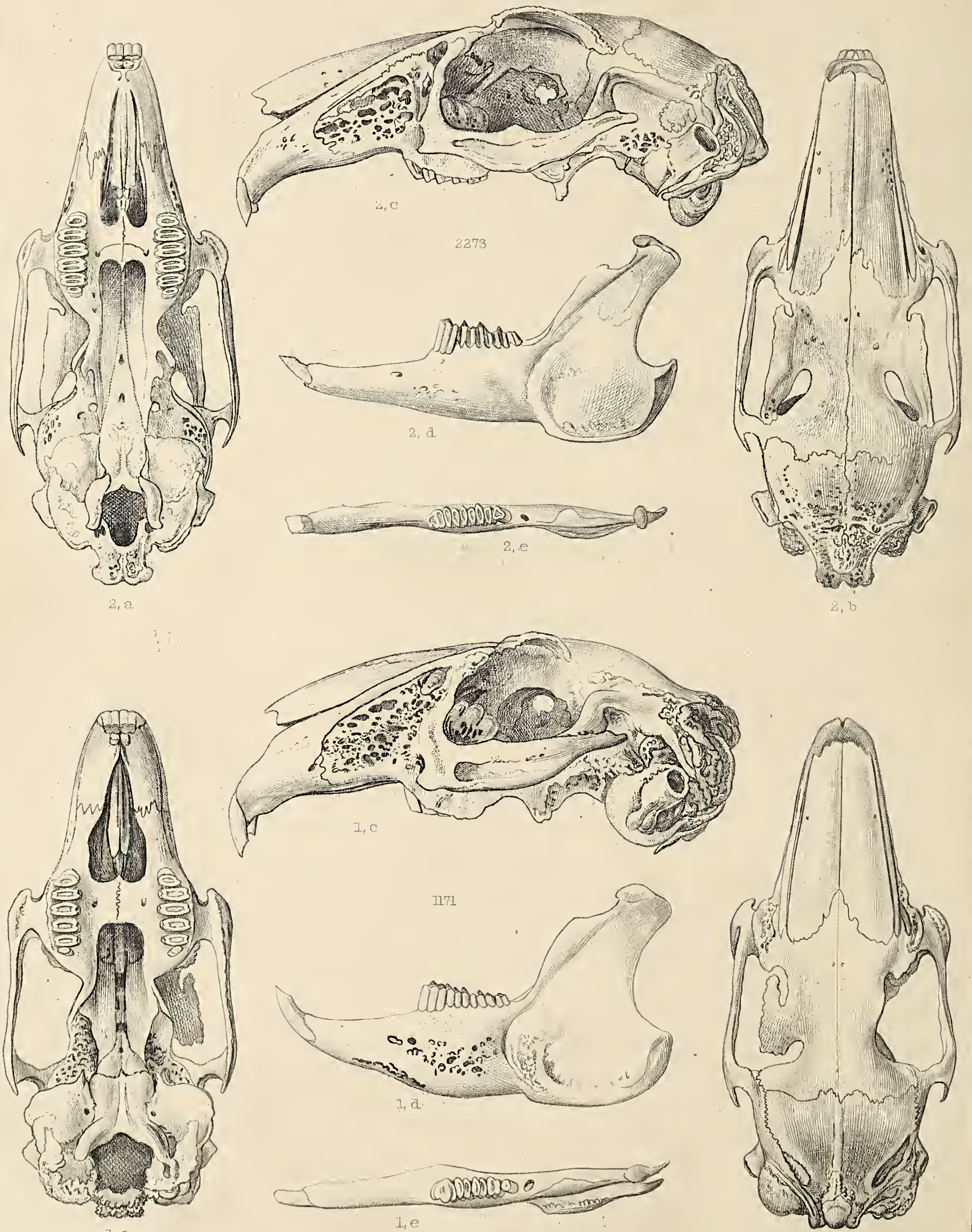
972/69 Ft. Union. Neb.

LVI

2277



2277/1475 Lepus glacialis
St. Johns
Newfoundland

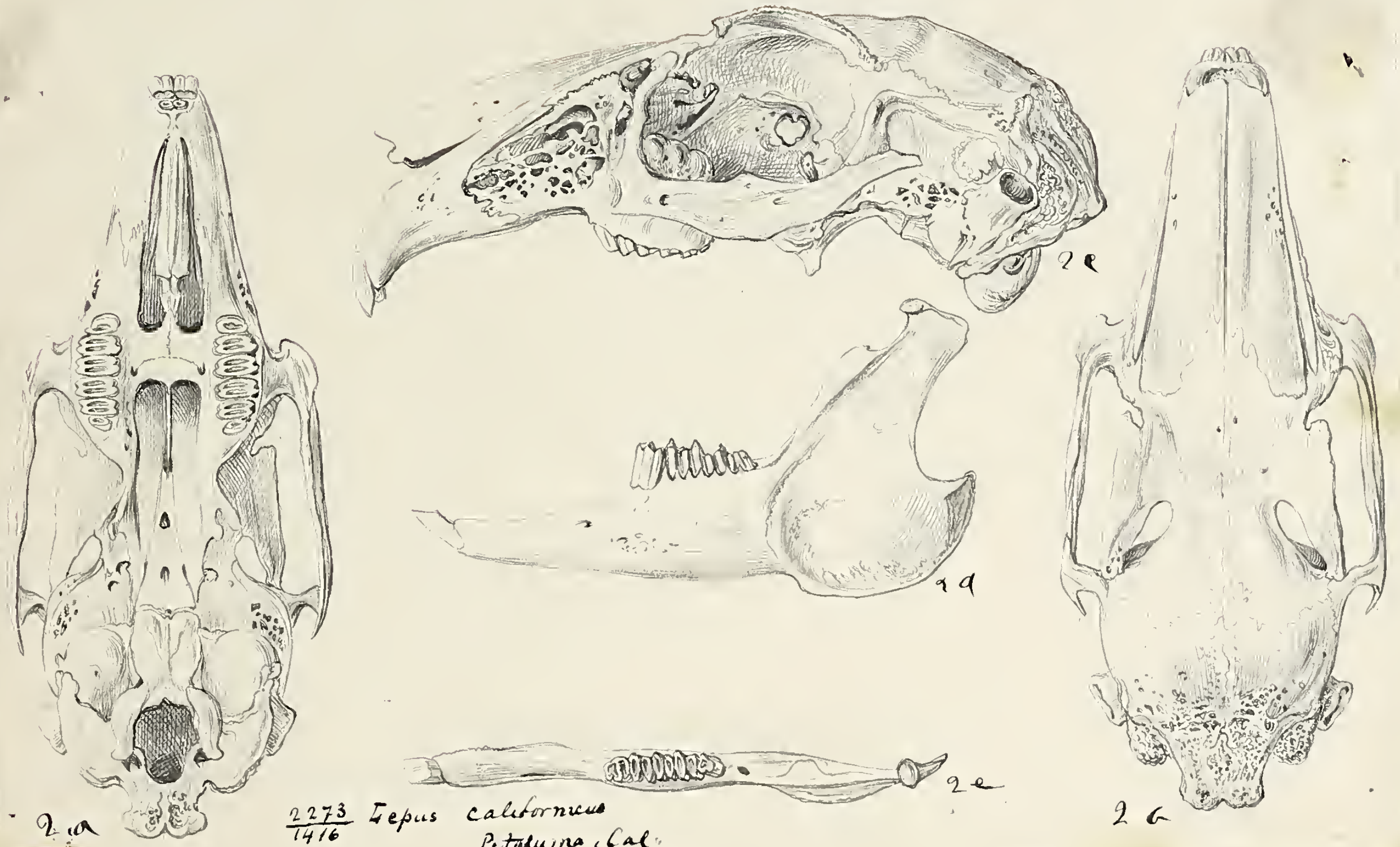


R. Metzeroth sc.

RSW. May 1.86

LVII

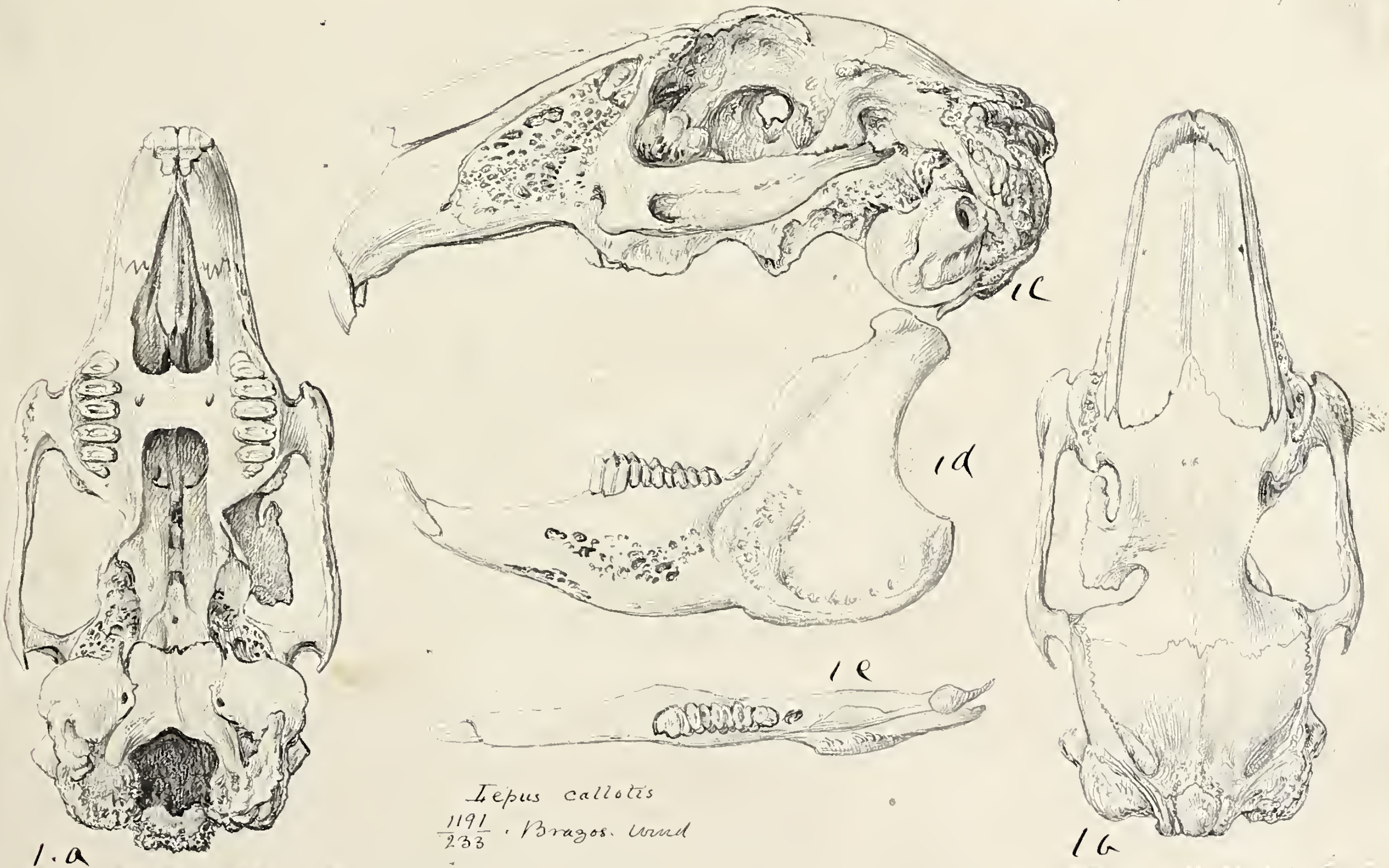
1273



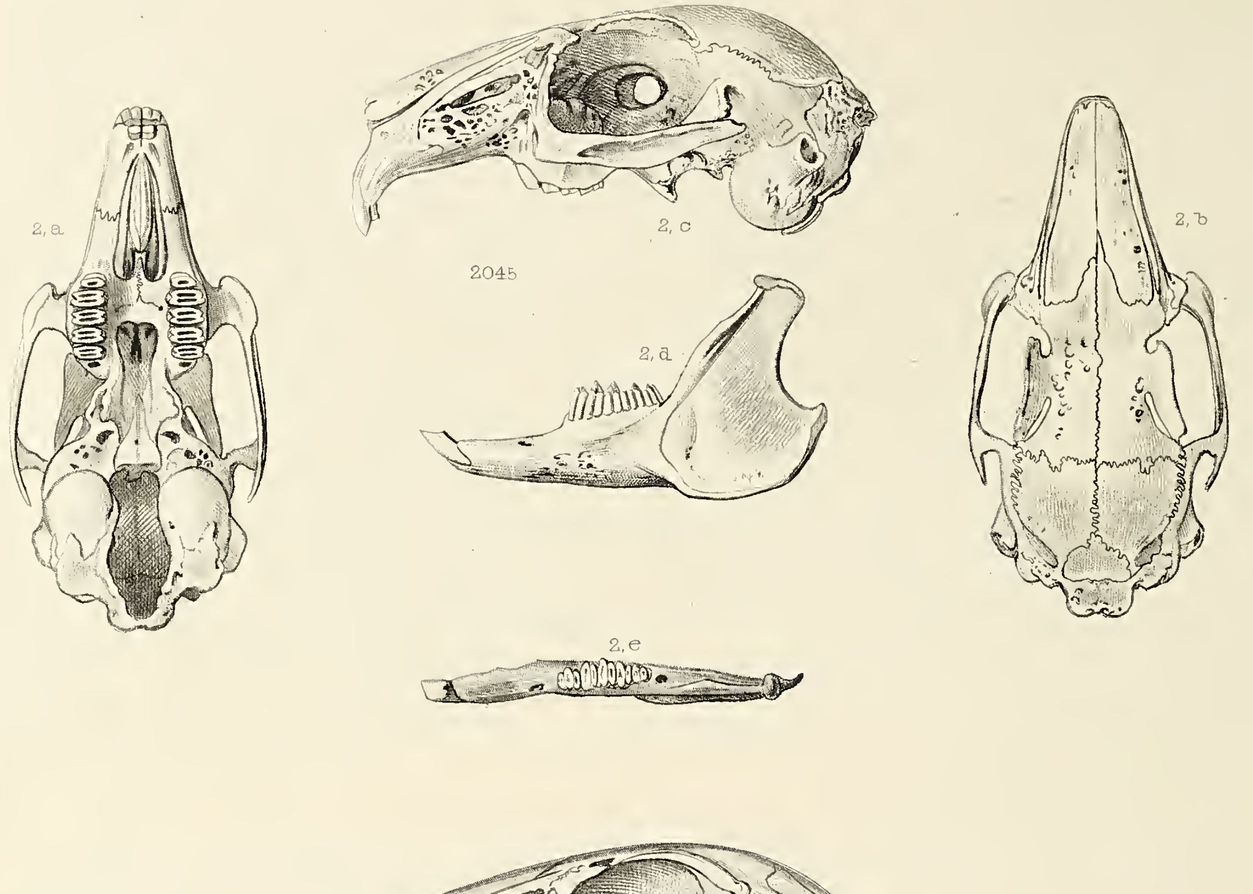
2273/1416 Lepus californicus
Petaluma, Cal.

LVII

1171



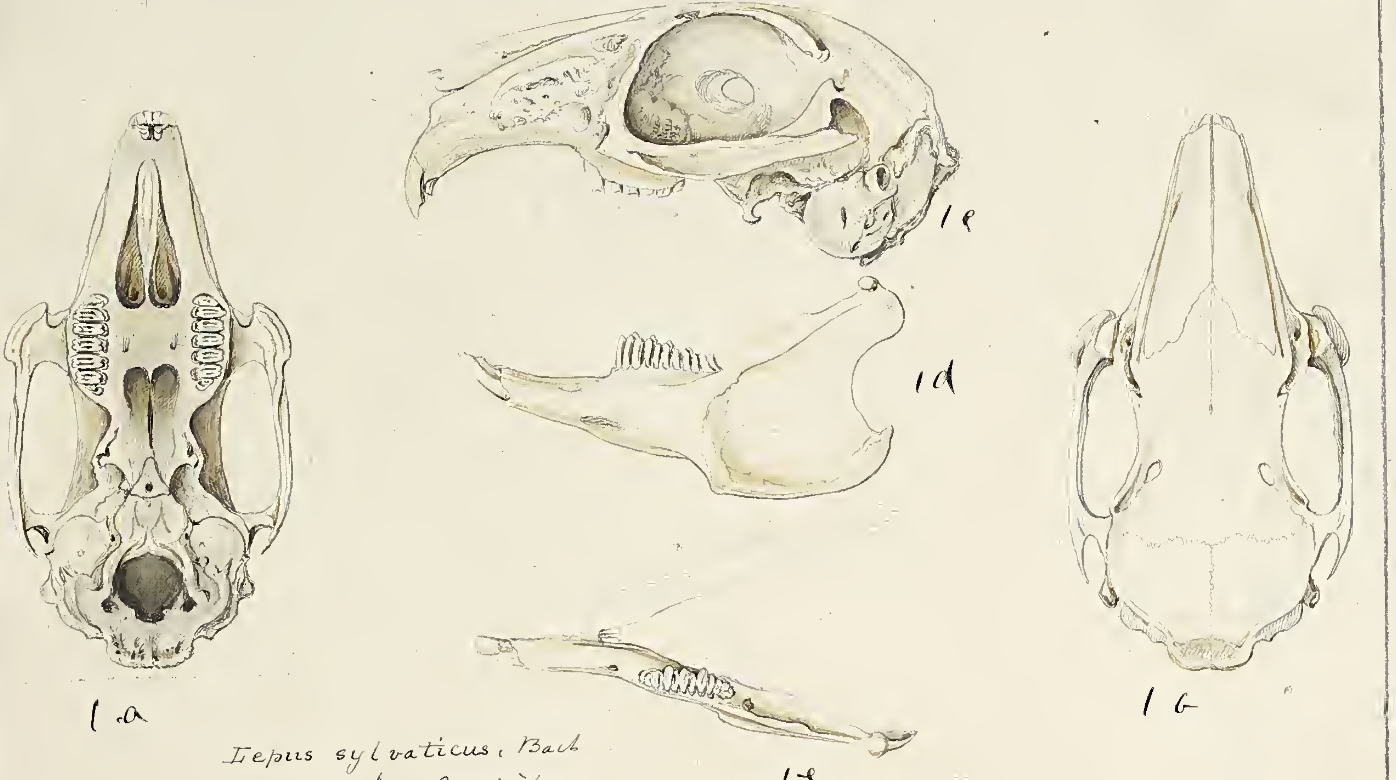
Lepus callotis
1191/233 . Brazos. Ind



R. Metzeroth fec.

LVIII

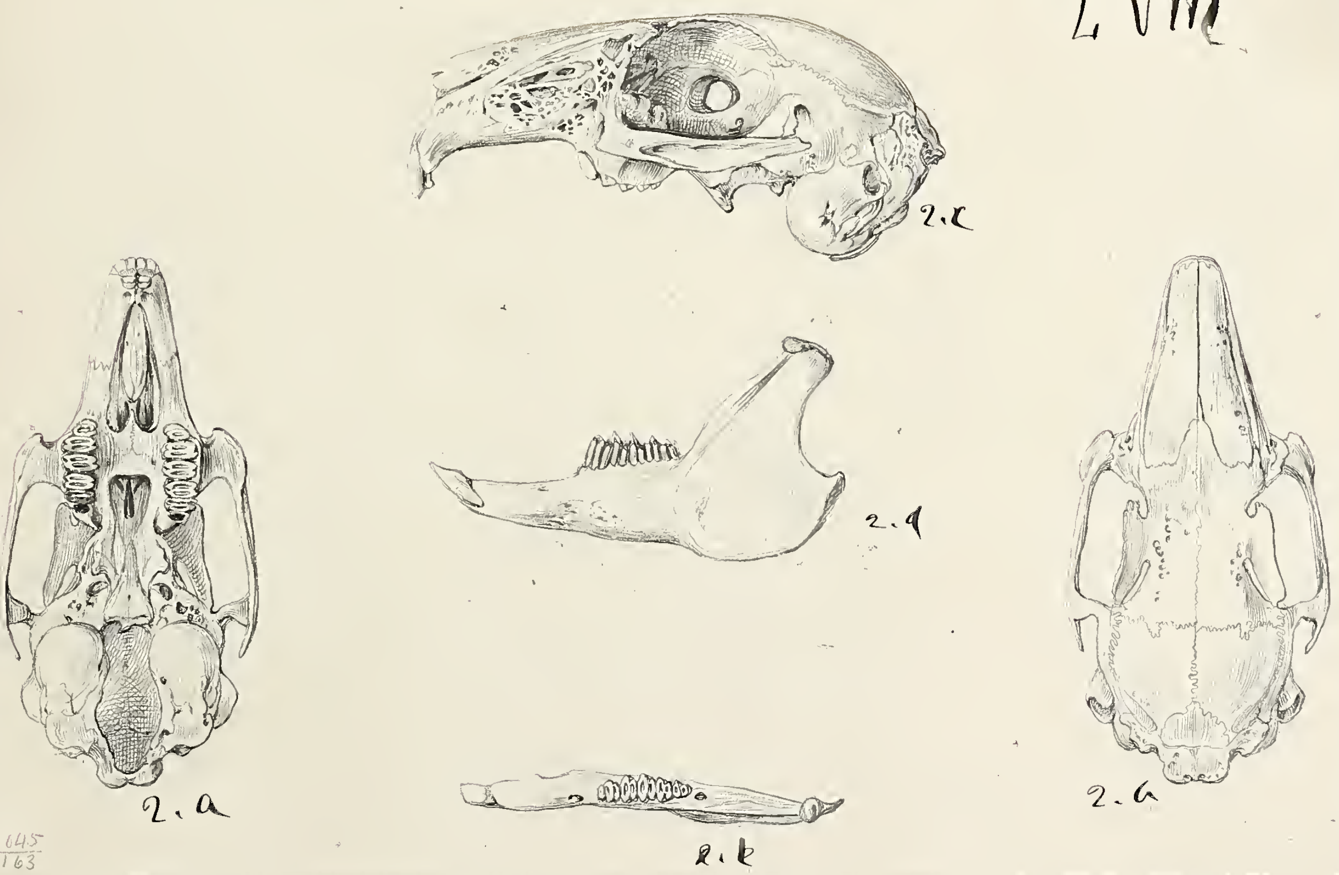
625.
6



Lepus sylvaticus, Bach
625^b: Carlisle.

2045

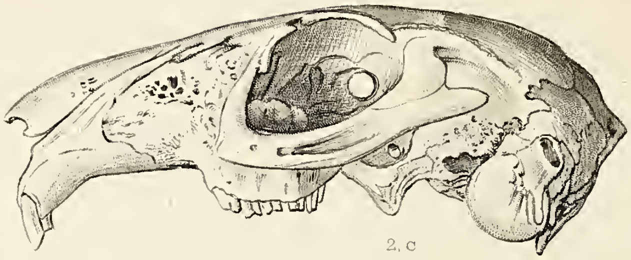
LVIII



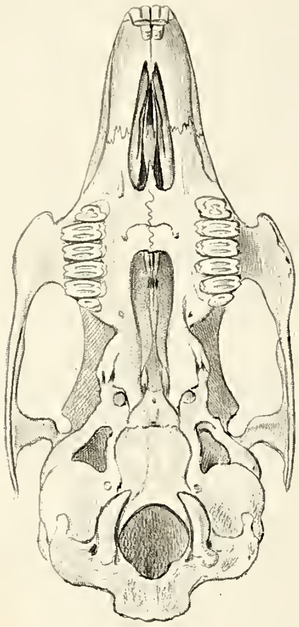
2045
1163

Lepus bachmani
audubonii.

San Francisco

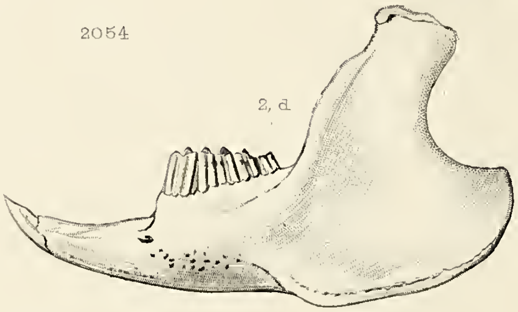


2, c

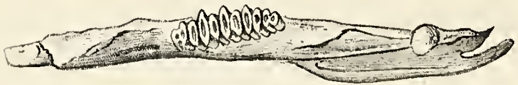


2, a

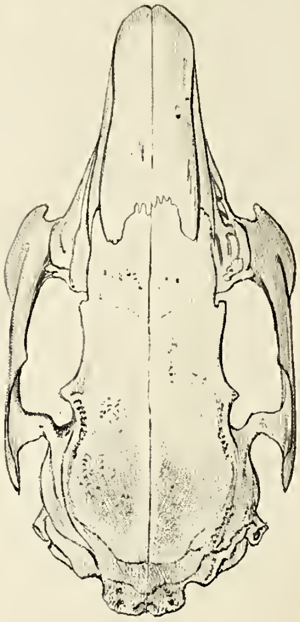
2054



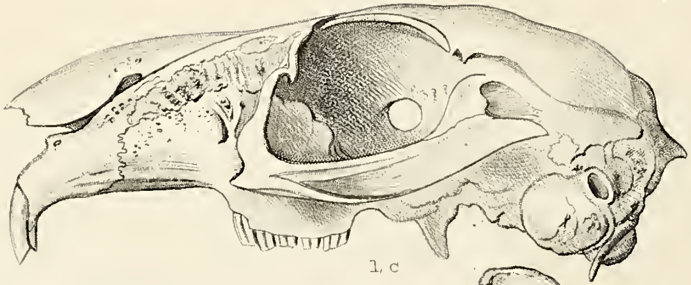
2, d



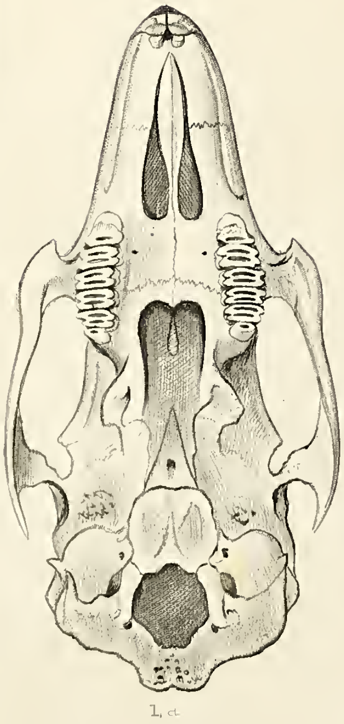
2, e



2, b

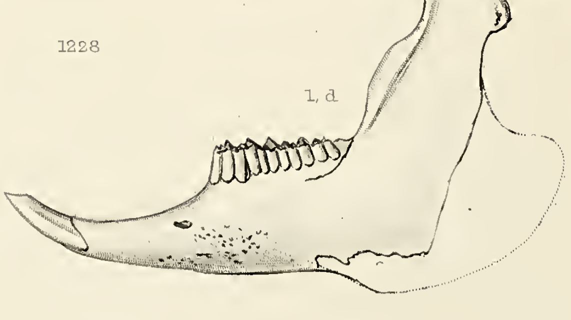


1, c

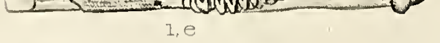


1, a

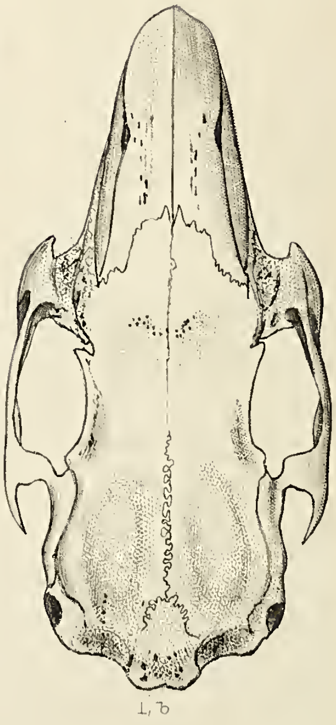
1228



1, d



1, e



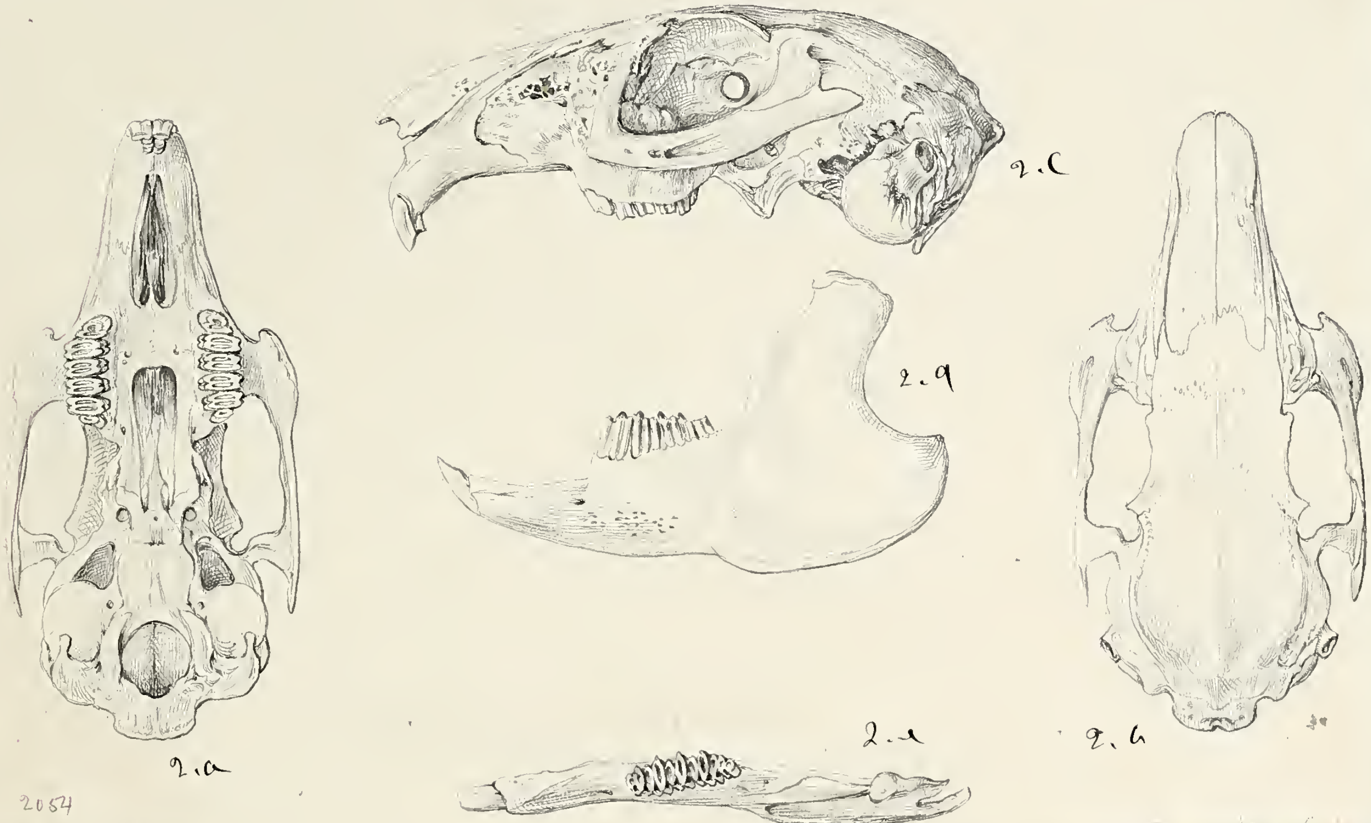
1, b

R. Metzeroth fec.

williamson

LIX

2054.

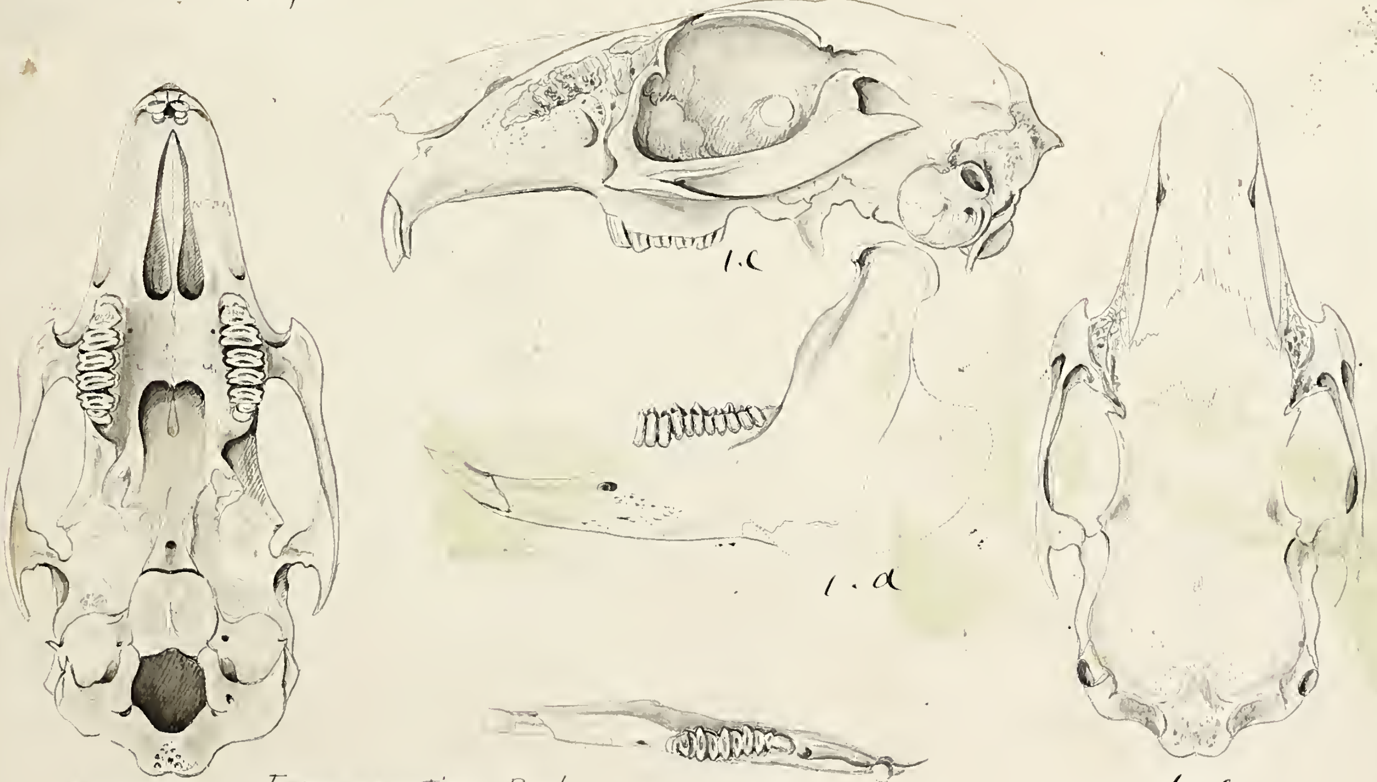


2054
Lepus palustris

+ [illegible]

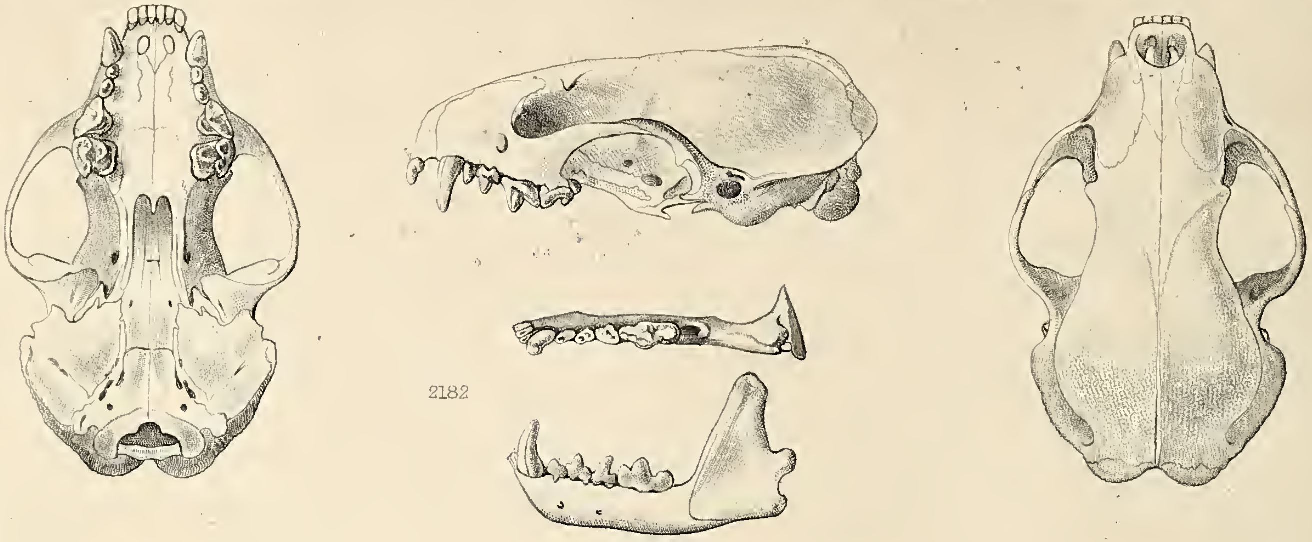
LIX

1228.

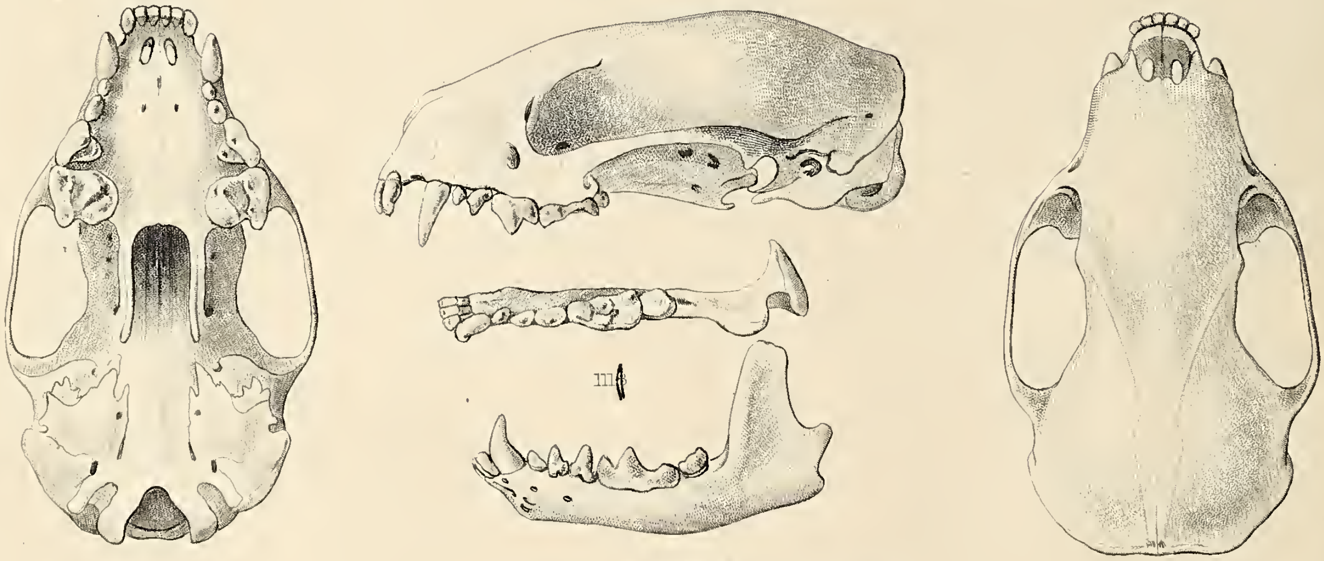


Lepus aquaticus, Bach
1228/291 Calcasieu, La

60

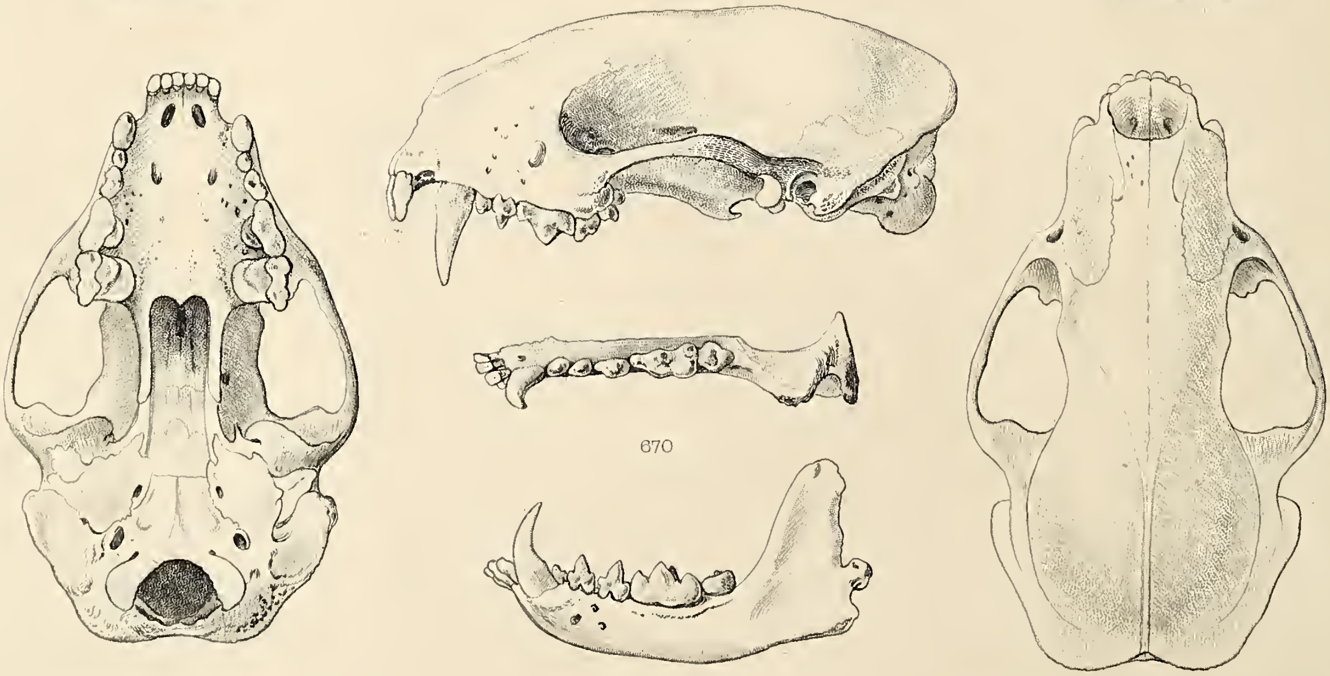


2182



1118

7



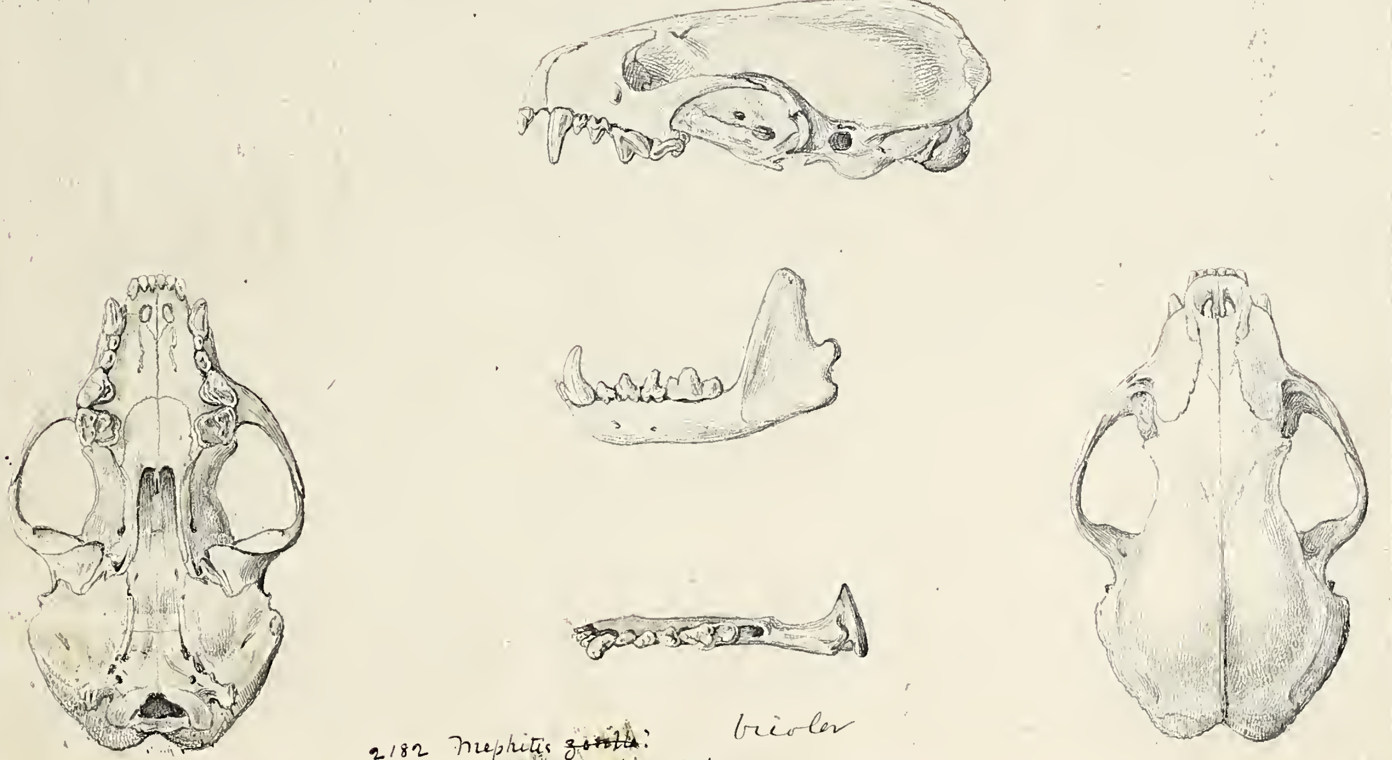
670

R. Metzeroth sc.

R.S.W. May 1. 56.

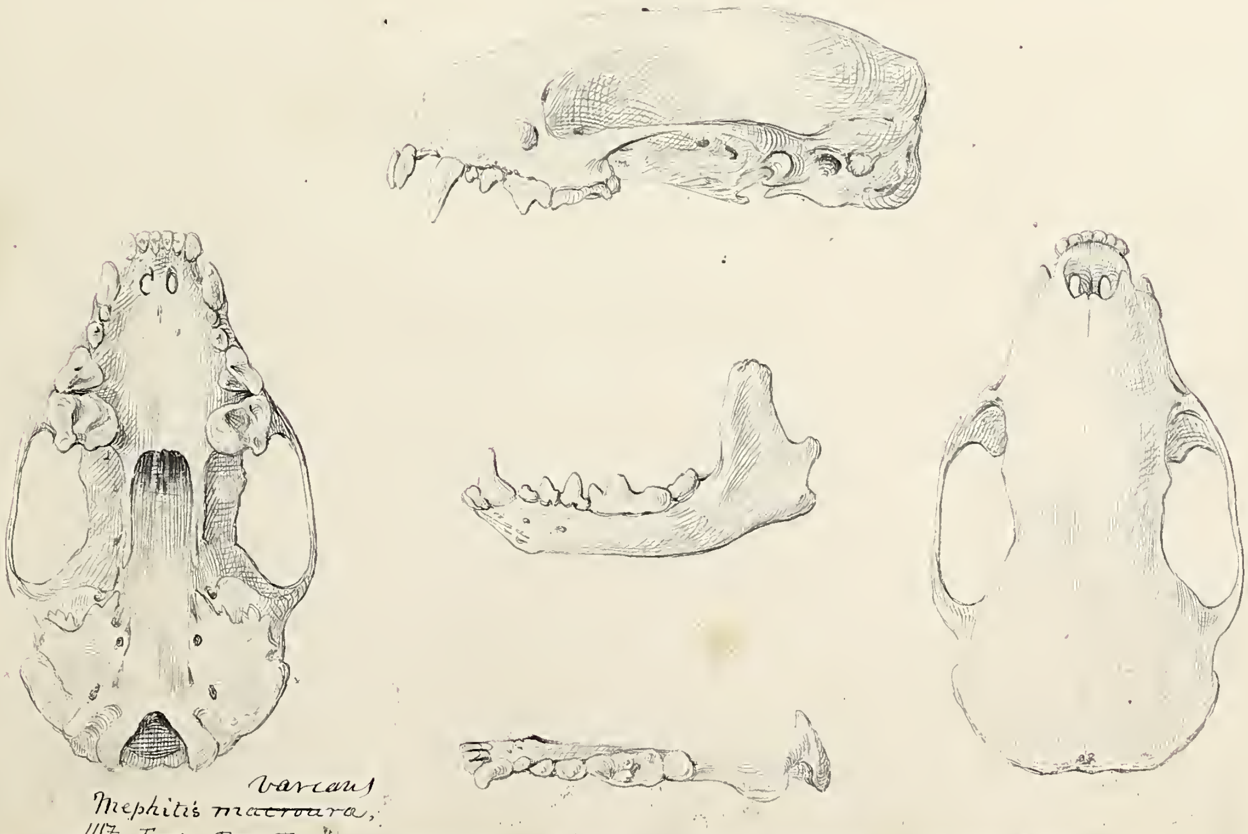
60

2182



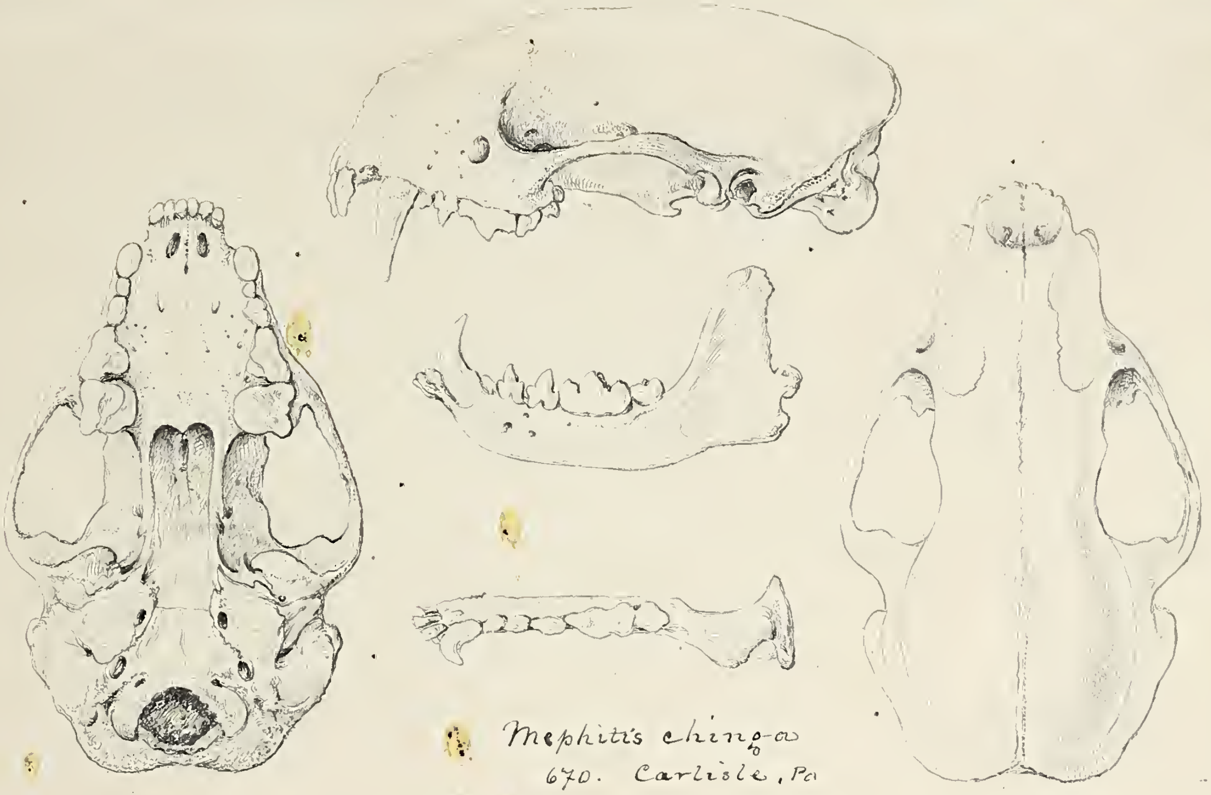
2182 Mephitis ~~zorilla~~? bicolor
Santa Clara. Cal.

1113



varians
Mephitis ~~macroura~~,
1117/127. Eagle Pass. Tex

670.



Mephitis chinga
670. Carlisle, Pa

3